

# 2007 Northern Ontario e-Health Information and Communication Technology Blueprint – Tactical Plan

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*North East*  
**LOCAL HEALTH INTEGRATION NETWORK**  
**RÉSEAU LOCAL D'INTÉGRATION DES SERVICES DE SANTÉ**  
*du Nord-Est*

*North West*  
**LOCAL HEALTH INTEGRATION NETWORK**  
**RÉSEAU LOCAL D'INTÉGRATION DES SERVICES DE SANTÉ**  
*du Nord-Ouest*



September 10, 2007

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# Acknowledgements

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The Northern Ontario e-Health Information and Communication Technology Tactical Plan is dedicated to the health service providers in Northern Ontario.

The North East and North West Local Health Integration Networks and ONe-Health wish to acknowledge the contributions of Northern Ontario health service providers to the Northern Ontario e-Health Information and Communication Technology Blueprint. The organizations and individuals who participated on the Project Steering Committee and numerous focus groups are listed in the appendices to this report. Their insights into how information and communication technology can support their services to their clients and patients formed the backbone of the strategies described in the Blueprint.

The North East and North West LHINs and ONe-Health also wish to acknowledge the contribution of:

- Tamara Shewciw, North East LHIN e-Health Lead;
- Bruce Sutton, North West e-Health LHIN Lead; and
- Laura Boston, Project Manager.

Susanne Flett, Maide Yazar and their team from Healthtech Inc. for conducting this work in a meaningful and professional manner that ensures that the results are relevant to the goals of the Northern Ontario's health service consumers and providers.

# 1. Executive Summary

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Northern Ontario health service providers have developed this Tactical Plan which identifies the priority projects necessary for the effective implementation of the e-Health Information and Communication (ICT) Blueprints they developed over the last three years.

The project was carried out under the leadership of the two Northern Ontario Local Health Integration Networks (LHIN) – North East LHIN and the North West LHIN. It was financially supported by FedNor (Industry Canada), the Ontario Ministry of Health and Long-Term Care (MoHLTC), and the North East and North West LHINs. The project was guided by a Steering Committee who reports to the ONe-Health Steering Committee, the North East LHIN and the North West LHIN. Healthtech Inc., an information management and technology consulting firm, provided the consulting support to the development of this plan.

The Blueprints were developed in two phases:

- Phase 1 was completed in January 2005 and involved seven sectors: hospitals, community health centres, regional cancer centres, regional inpatient mental health hospitals/programs, Community Care Access Centres (CCACs), educational providers, and regional ICT projects (52 participating agencies). Please refer to <http://www.sah.on.ca/2005NOHI.pdf> for a report.
- Phase 2 involved the broader health system – addictions, children’s treatment centres, mental health, community pharmacists, broad range of community support services (CSS), chronic disease management and prevention and patient self management programs, independent health facilities, nurse practitioners, long term care homes, primary care physicians and Family Health Teams, public health, and specialist physicians. Acknowledging that the true benefits of e-Health lie in the integration of all health information, this all inclusive approach to the development of the Blueprint ensures that, in the long term, this Blueprint lays the foundations for the achievement of this goal. Please refer to <http://one-health.ca/portal/ICTPhaseII/tabid/56/Default.aspx> for a report.

At the start of the Tactical Planning process, the Steering Committee revisited the vision, guiding principles, goals and strategies of the Blueprints and confirmed these.

## 1.1 Vision

The vision for the e-Health Information and Communication Technology for Northern Ontario’s health service providers is one in which:

*Information and Communication technology supports the processes of quality healthcare provision, access to health information, improvement of consumer outcomes, and the most effective use of available resources across Northern Ontario, through collaboration and sharing information amongst providers and with consumers.*

## 1.2 Guiding Principles

- Consumer-centric system.
- Ease of use and access to information.

- Interoperability and integration.
- Standardization.
- Consent, security and privacy.
- Delivery of required electronic record content for each sector.
- Responsive to internal and external change forces.
- Benefits realization.
- Funding and sequencing of projects, following Northern Ontario and provincial priorities.
- Leverage investments already made.
- Make regional projects possible.
- Apply best practices.
- Promotion of effective use of health human resources and quality of working life.
- Evolving approach to achievement of strategies.
- Enabling mandatory reporting through the collection of data at the point of care.
- Aligned with provincial e-Health, and NE and NW LHINs' Integrated Health Service Plan (IHSP) directions.

## 1.3 Strategies

1. Establish the Electronic Record within individual organizations.
2. Establish capability to share information among electronic records to facilitate information integration.
3. Use technologies to promote service provider communication.
4. Use technologies to support consumers to achieve improved health outcomes.
5. Build on existing provincial initiatives – Wait Times Information System/Enterprise Master Patient Index (WTIS/EMPI), Ontario Telemedicine Network (OTN), Picture Archiving and Communications System (PACS), Ontario Laboratory Information System (OLIS).
6. Develop system-wide decision support capability, facilitating evidence-based decisions.
7. Support work effectiveness.
8. Support research and education.
9. Develop technical and support infrastructure and utilize new technologies to match requirements.
10. Maximize available resources.

## 1.4 Tactical Plan

Priority projects are where effort should be focused over the next 3 to 5 years to implement the Blueprint's vision and strategies. They are a useful way to target activity that is needed to improve information and communication technology capability among health service providers in Northern Ontario. Sixteen projects were selected by the Steering Committee, based on the feedback from stakeholder representatives and guiding principles of the strategies and implementation planning.

1. Establish a Project Management Office for the Northern Ontario e-Health ICT Tactical Plan.

2. Develop a regional ICT infrastructure, support and integration program, including the development of a technology integration framework, architecture and standards.
3. Enable Smart Systems for Health Agency (SSHA) connectivity.
4. Implement SSHA's ONE Mail.
5. Leverage the provincial EMPI.
6. Increase access to Telehealth.
7. Implement a Clinical Provider Portal (Clinical Viewer).
8. Support the referral processes through e-Referrals.
9. Implement an e-Physician strategy.
10. Continue to develop organizational electronic records and the regional Electronic Health Record.
11. Implement the Pan Northern Ontario PACS Project (PNOPP).
12. Continue to implement administrative information systems.
13. Expand Ontario Drug Benefit (ODB) Plan Viewer access.
14. Develop the Northern Ontario Directory of Services.
15. Develop a Consumer Portal.
16. Align with OLIS.

Common themes that have emerged among these projects are the need to work collaboratively in the region to standardize the infrastructure, to set up common ICT support services, to minimize the number of applications, and, most importantly, to advocate for investments so that all service providers can have the electronic tools they need to manage patient/client information. Many of the projects leverage existing investments. Prime examples are projects that build on SSHA's and Ontario Telemedicine Network's programs and services.

The above projects will take three to four years to implement, if the appropriate funding and implementation resources can be put into place. It is estimated that the regional projects will require \$61.3M in one-time costs and \$3.9M in operating costs (by Year 4). These costs do not yet include the investments each organization must make to implement their own electronic record.

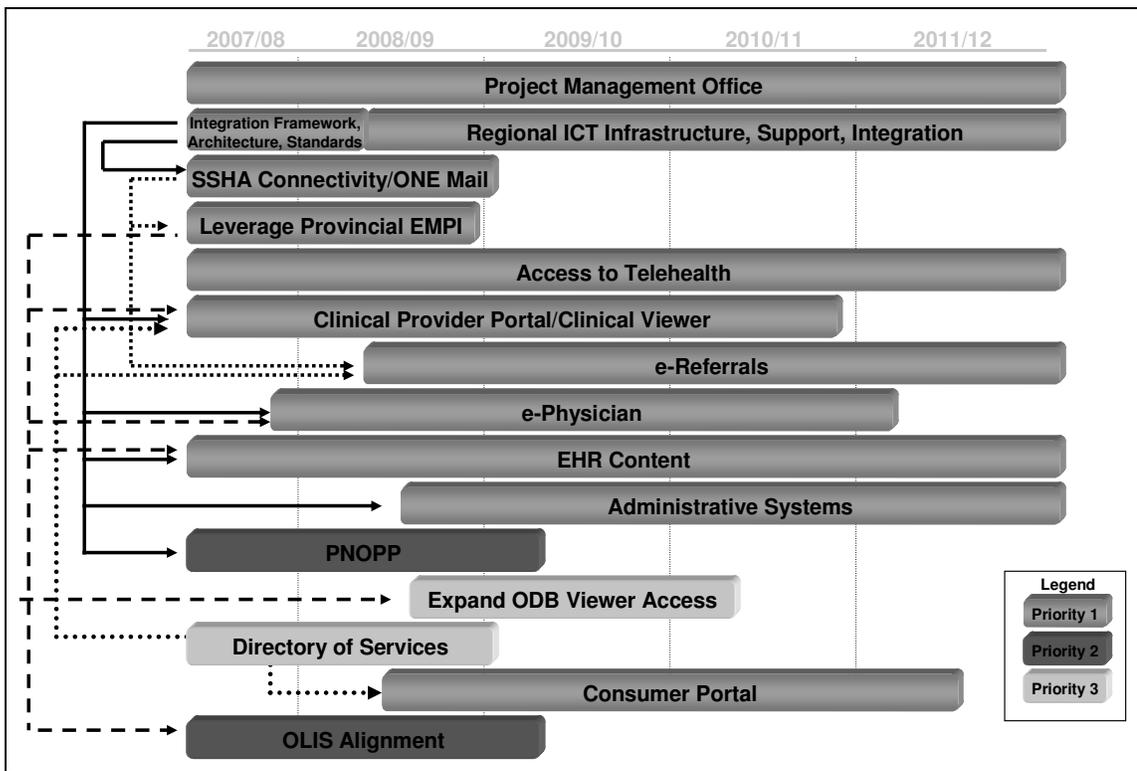


Figure 1: Tactical Plan Overview and Dependencies

## 1.5 Future Leadership of the Tactical Plan

The Steering Committee proposed that a governance body manage and monitor the implementation of the Tactical Plan and take responsibility for updating the strategies and the tactical plan. The governance body will monitor the implementation progress to ensure their alignment with evolving health strategies. It is recommended the ONE-Health Steering Committee's membership become cross-sectoral and that it take on these responsibilities.

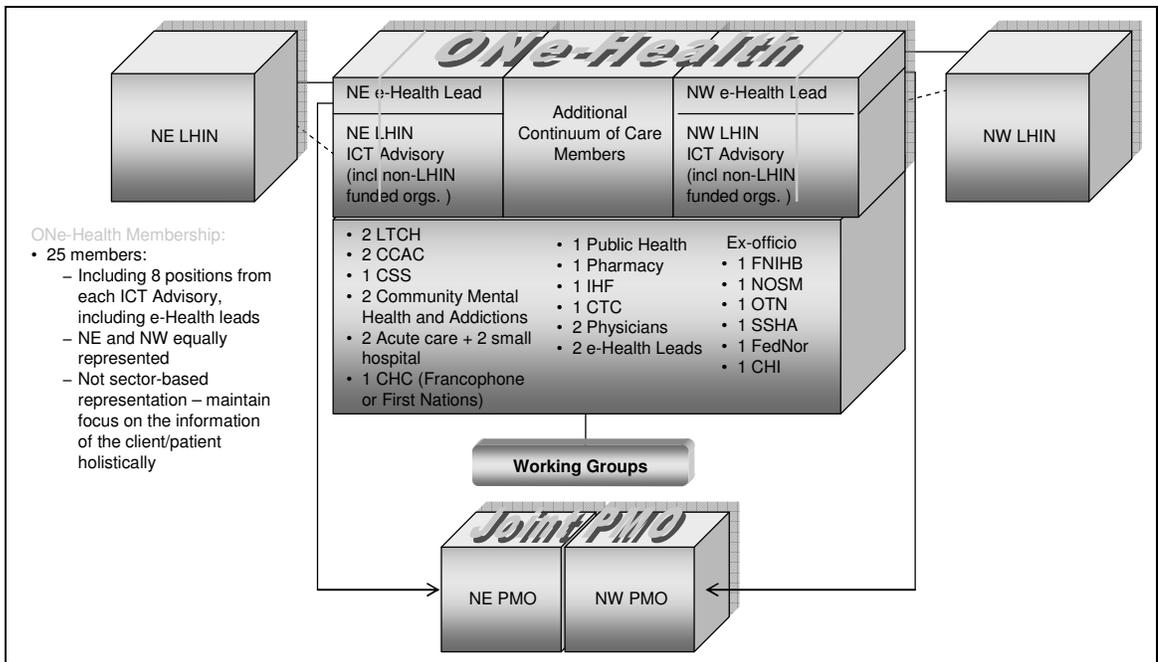


Figure 2: Governance: Structure and Membership

## 2. Introduction

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This report documents the Tactical Plan developed for the implementation of the Northern Ontario e-Health Information and Communication (ICT) Blueprint. Information and Communication Technologies must support the delivery of healthcare.

The Northern Ontario e-Health ICT Blueprints Phases 1 and 2 provided the context and strategies to support health strategies of the Northern Ontario LHINs in innovative yet practical ways to support use of information to improve the health of Northern Ontarians. The purpose of this Tactical Plan is to develop a single, coordinated workplan for information and communication systems, including current and emerging information and communications technologies within the broad continuum of care in Northern Ontario and within the context of the broader health and e-Health strategies of the Province of Ontario. The process developed consensus on vision, strategies, tactical goals and principles, and activities for information and communication systems in the health care sector over the next four to five years.

The Blueprints were developed in two phases:

- Phase 1 was completed in January 2005 and involved seven sectors: hospitals, community health centres, regional cancer centres, regional inpatient mental health hospitals/programs, Community Care Access Centres (CCACs), educational providers, and regional ICT projects (52 participating agencies). Please refer to <http://www.sah.on.ca/2005NOHL.pdf> for a report.
- Phase 2 involved the broader health system – addictions, children’s treatment centres, mental health, community pharmacists, broad range of community support services (CSS), chronic disease management and prevention and patient self management programs, independent health facilities, nurse practitioners, long term care homes, primary care physicians and Family Health Teams, public health, and specialist physicians. Acknowledging that the true benefits of e-Health lie in the integration of all health information, this all inclusive approach to the development of the Blueprint ensures that, in the long term, this Blueprint lays the foundations for the achievement of this goal. Please refer to <http://one-health.ca/portal/ICTPhaseII/tabid/56/Default.aspx> for a report.

Northern Ontario health service providers have developed this Tactical Plan which identifies the priority projects necessary for the effective implementation of the e-Health Information and Communication Blueprints they developed over the last three years.

The project was carried out under the leadership of the two Northern Ontario Local Health Integration Networks (LHIN) – North East LHIN and the North West LHIN. It was financially supported by FedNor (Industry Canada), the Ontario Ministry of Health and Long Term Care (MoHLTC), and the North East and North West LHINs. The project was guided by a Steering Committee who reports to the ONe-Health Steering Committee, the North East LHIN and the North West LHIN. Healthtech Inc., an information management and technology consulting firm, provided the consulting support to the development of this plan. The Terms of Reference of the project Steering Committee and its membership are presented in Appendices A and B, respectively.

The Northern Ontario e-Health ICT Tactical Plan continues to use the technical planning framework used in developing the e-Health ICT Blueprint for Northern Ontario.

The Northern Ontario e-Health ICT Tactical Plan builds on the e-Health and ICT initiatives within the two LHINs and the province.

## 2.1 Scope of the Tactical Plan

Building on the strategies of Northern Ontario e-Health ICT Blueprints Phases 1 & 2, this tactical plan covers comprehensively the health service organizations in Northern Ontario. Specifically,

- Children’s Treatment Centres (CTC).
- Community Care Access Centres (CCAC).
- Community Health Centres (CHC).
- Community mental health and addictions services.
- Community pharmacies.
- Hospitals (acute care, cancer care, continuing care, mental health and rehabilitation services).
- Group Health Association (GHA).
- Independent Health Facilities (IHF) providing laboratory, diagnostic imaging and other diagnostic services.
- Long term care homes (LTCH).
- Medical practitioners – aligned primary care, other primary care physicians, and specialist physicians.
- Nurse practitioners.
- Public health units.
- Aboriginal health services –including those funded by the Ontario MoHLTC, Health Canada’s First Nations and Inuit Health Branch (FNIHB) – were invited to participate in the project.

## 2.2 Guide to the Tactical Plan

This project report describes the Tactical Plan, supported by a series of Appendices providing background information or more details of the plan. This Tactical Plan needs to be considered within the context of the Northern Ontario Blueprints, since it does not repeat any information that has already been presented in the previous reports.

## 2.3 List of Appendices

The following appendices are attached to this report:

- Appendix A: Project Steering Committee Terms of Reference;
- Appendix B: Steering Committee Membership;
- Appendix C: Current State Update (hospitals, CCACs, CHCs, Group Health Association);
- Appendix D: Tactical Plan Focus and Discussion Group Attendance (April/May 2007);
- Appendix E: Focus and Discussion Group Feedback Summary;
- Appendix F: Strategic Opportunity Prioritization;
- Appendix G: Implementation Readiness Assessment;
- Appendix H: Glossary of Terms and Abbreviations; and
- Appendix I: Bibliography.

## 3. Approach and Methodology

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The Tactical Planning project focused on priority setting, development of specific project implementation plans, with an implementation road map and preliminary capital and operating budget estimates. The Plan includes further detailing for ICT governance and coordination structure to support the priority projects.

The project approach was similar to the one that was successfully used in Phases 1 and 2:

- a consultative and comprehensive approach that included all sectors;
- alignment with the provincial e-Health, transformation and accountability agenda;
- alignment with the Integrated Health Services Plans of the North East and North West LHINs;
- alignment with the business and service objectives of the various sectors;
- building on existing alliances, partnerships and ICT organizations, including the data management partnerships; and
- alignment with the diabetes, chronic disease management, Aboriginal Health, and Francophone health services strategies and initiatives.

### 3.1 Tactical Planning Methodology

The Tactical Plan was developed using the following methodology:

- update current state information;
- confirm the vision, strategies and priority projects;
- prepare detailed tactical plans for the priority project; and
- determine a governance model to support the implementation of the tactical plan.

#### 3.1.1 Update Current State Information on ICT

Since the data on the current state of ICT from the Phase 1 project was two-years old, a process of refreshing the information on applications and infrastructure was undertaken. The relevant documents from the Phase 1 report were circulated. The updated list of applications is appended to this report as Appendix C.

#### 3.1.2 Confirm the Vision, Strategies and Priority Projects

Focus groups and interviews were held across Northern Ontario with representatives from participating organizations. The purpose was to discuss the development of an e-Health ICT Tactical Plan for Northern Ontario, validate the short/medium/long-term ICT priority projects, their impact on the organizations, and required implementation resources and technology solutions. Discussions were held in English and French.

A series of meeting were also held with service users (consumers, patients, family members) in English and French, seeking their input on their expectations of how technology should be used in acquiring, managing and sharing their health care information.

Based on the feedback, the Steering Committee finalized the vision, guiding principles, and e-Health ICT strategies, and confirmed the priority projects.

### 3.1.3 Prepare Detailed Tactical Plans for the Priority Projects

There were sixteen priority projects identified for the Tactical Plan. Detailed plans were developed for these. These are described in a subsequent chapter of this report.

In addition, the Steering Committee reviewed the comprehensive list of projects that constitutes the Blueprint. These are presented in Appendix F.

### 3.1.4 Determine a Governance Model to Support the Implementation of the Tactical Plan

The Steering Committee reviewed the governance models developed in Phases 1 and 2, and proposed a model for the ongoing, system-wide coordination and governance of the Tactical Plan.

## 3.2 Stakeholder Engagement Process

The Northern Ontario e-Health ICT Tactical Plan was developed under the guidance of a sector-wide Steering Committee that was co-chaired by the LHINs' e-Health Leads. The Committee included representation from addictions and mental health, children's treatment centres, community care access centres, community support services, hospitals (including complex continuing care, mental health, and regional cancer care programs), independent health facilities, long term care homes, community pharmacies, Nurse Practitioners, Physicians, public health, Ontario Ministry of Health and Long Term Care's e-Health Program, Canada Health Infoway, Ontario Telehealth Network, Smart Systems for Health Agency and FedNor. The Steering Committee Terms of Reference and Membership are presented in Appendices A and B, respectively.

The engagement of stakeholders was sought in a number of ways.

- Input was sought through discussion groups and interviews that were held with physicians, nurse practitioners, pharmacists, and representatives of service provider organizations throughout Northern Ontario – identifying issues, priorities, opportunities and to validate draft material.
- Focus groups were held with clients/patients.
- Interviews were held with representatives of key organizations such as OntarioMD, Northern Ontario School of Medicine, Ontario Telehealth Network, Smart Systems for Health.
- The sector-wide Steering Committee provided ongoing reviews and overall direction to the project.
- The project documents were posted on the project's web-site, where they were available for review and feedback.

Location	Type of Group			Total
	Tactical ICT Planning Discussion Group – Physicians, Nurse Practitioners, Pharmacists	Tactical ICT Planning Discussion Group	Service User Discussion Group	
Parry Sound	0	9	4	13
Sudbury	5	27	10	42
Sault Ste. Marie	3	22	20	45
Kenora	0	20	5	25
Thunder Bay	7	22	20	49

Location	Type of Group			Total
	Tactical ICT Planning Discussion Group – Physicians, Nurse Practitioners, Pharmacists	Tactical ICT Planning Discussion Group	Service User Discussion Group	
North Bay	5	38	21	<b>64</b>
Timiskaming	1	6	2	<b>9</b>
Timmins	0	23	11	<b>34</b>
<b>Total</b>	<b>21</b>	<b>167</b>	<b>93</b>	<b>281</b>

Figure 3: Focus Group Attendance – April/May 2007

Focus and discussion group attendance is detailed in Appendix D. The feedback from the focus and discussion groups is presented in Appendix E.

## 4. Confirmation of the Strategic Framework and Strategies

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The Steering Committee reviewed the strategic framework and strategies from the Phase 1 and Phase 2 projects and updated these with a view to provide guidance to an integrated plan across the region covering all health service sectors.

### 4.1 Vision

The vision for the e-Health Information and Communication Technology for Northern Ontario's health service providers is one in which:

*Information and Communication technology supports the processes of quality healthcare provision, access to health information, improvement of consumer outcomes, and the most effective use of available resources across Northern Ontario, through collaboration and sharing information amongst providers and with consumers.*

### 4.2 Guiding Principles of the e-Health ICT Blueprint and Tactical Plan

- Consumer-centric system.
- Ease of use and access to information.
- Interoperability and integration.
- Standardization.
- Consent, security and privacy.
- Delivery of required electronic record content for each sector.
- Responsive to internal and external change forces.
- Benefits realization.
- Funding and sequencing of projects, following Northern Ontario and provincial priorities.
- Leverage investments already made.
- Making regional projects possible.
- Apply best practices.
- Promotion of effective use of health human resources and quality of working life.
- Evolving approach to achievement of strategies.
- Enabling mandatory reporting through the collection of data at the point of care.
- Aligned with provincial e-Health, and NE and NW LHINs' Integrated Health Service Plan (IHSP) directions.

### 4.3 Shared Beliefs

- Information is a critical health resource that must be strategically managed across the health care system.
- Readily and easily shared information is the bridge across our vast geography, among service providers and to accessible care in any setting.
- Data should be captured and secured once, at source, and should be shared in a secure and confidential manner.

- Information must be integrated around the individual and not around the service or function.
- Rules for confidentiality, security, access and usage must be developed, agreed to, and built into the system.
- Each other's autonomy, and what we have been able to accomplish to date should be respected. Nevertheless, only by working together collaboratively, can we maximize the available opportunities and improve how health care is delivered in the North.
- What we can achieve together will be more than what we can achieve individually and will increase the capacity of each organization to deliver health care services.
- Commitment of resources to ICT is required to ensure that the strategic plan can be implemented.

## 4.4 Strategic Goals

- Improve consumer access to health information to support informed decision making.
- Improve communication among service providers.
- Improve care delivery.
- Improve service delivery management.
- Enable information integration and communication among stakeholders and sectors.
- Commit to research, education and knowledge transfer.
- Maximize available funding.
- Ensure a planned and coordinated approach to e-Health and ICT in Northern Ontario.

## 4.5 Strategies

1. Establish the Electronic Record within individual organizations.
2. Establish capability to share information among electronic records to facilitate information integration.
3. Use technologies to promote service provider communication.
4. Use technologies to support consumers to achieve improved health outcomes.
5. Build on existing provincial initiatives – Wait Times Information System/Enterprise Master Patient Index (WTIS/EMPI), Ontario Telemedicine Network (OTN), Picture Archiving and Communications System (PACS), Ontario Laboratory Information System (OLIS).
6. Develop system-wide decision support capability, facilitating evidence-based decisions.
7. Support work effectiveness.
8. Support research and education.
9. Develop technical and support infrastructure and utilize new technologies to match requirements.
10. Maximize available resources.

These strategies are described in detail in the Phase 1 and/or Phase 2 Blueprints.

## 4.6 From Vision to Action

Sixteen priority projects were selected for the tactical plan. How these relate to the above strategies is demonstrated in Figure 4 below.

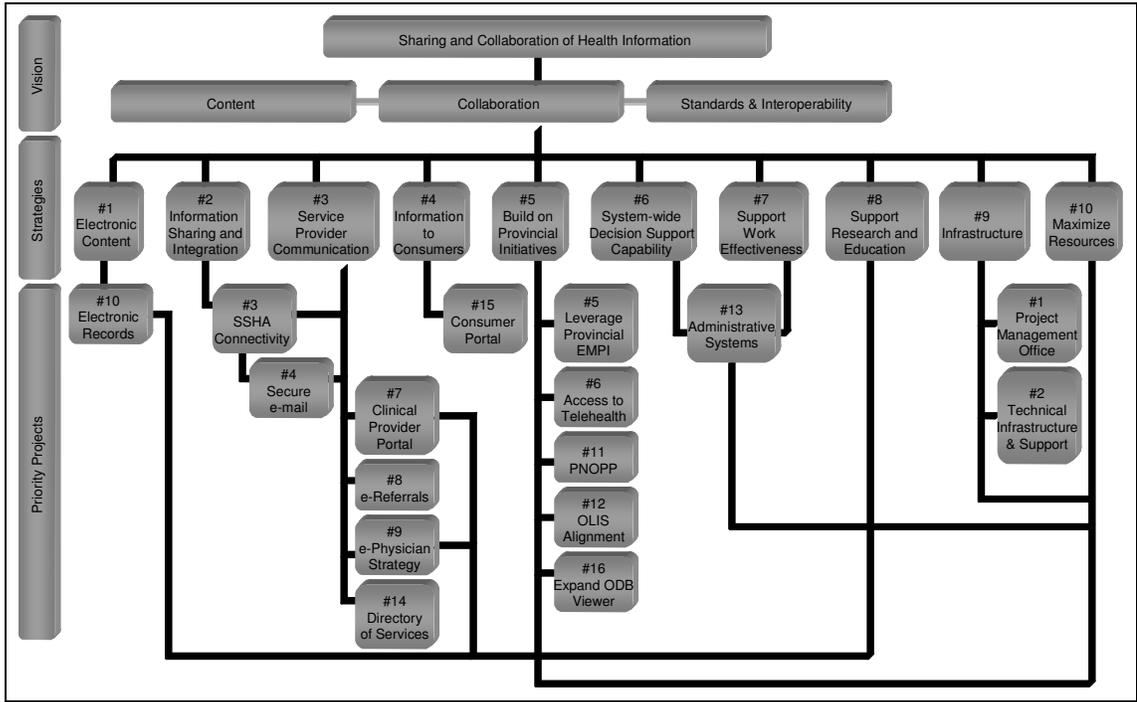


Figure 4: Strategies and Priority Projects

## 5. Tactical Plan

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Priority projects are where effort should be focused over the next 3 to 5 years to implement the Blueprint. They are a useful way to target activity that is needed to improve information and communication technology capability among health service providers in Northern Ontario.

### 5.1 Priority Projects

Sixteen projects were selected.

1. Establish a Project Management Office for the Northern Ontario e-Health ICT Tactical Plan.
2. Develop a regional ICT infrastructure, support and integration program, including the development of a technology integration framework, architecture and standards.
3. Enable Smart Systems for Health Agency (SSHA) connectivity.
4. Implement SSHA's ONE Mail.
5. Leverage the provincial EMPI.
6. Increase access to telehealth.
7. Implement a Clinical Provider Portal (Clinical Viewer).
8. Support the referral processes through e-Referrals.
9. Implement an e-Physician strategy.
10. Continue to develop organizational electronic records and the regional Electronic Health Record.
11. Implement the Pan Northern Ontario PACS Project (PNOPP).
12. Continue to implement administrative information systems.
13. Expand Ontario Drug Benefits (ODB) Plan Viewer access.
14. Develop the Northern Ontario Directory of Services.
15. Develop a Consumer Portal.
16. Align with OLIS.

Figure 5 below shows the overall timeline for these projects and their interdependencies. The projects are described in more detail in the next sections of the Tactical Plan.

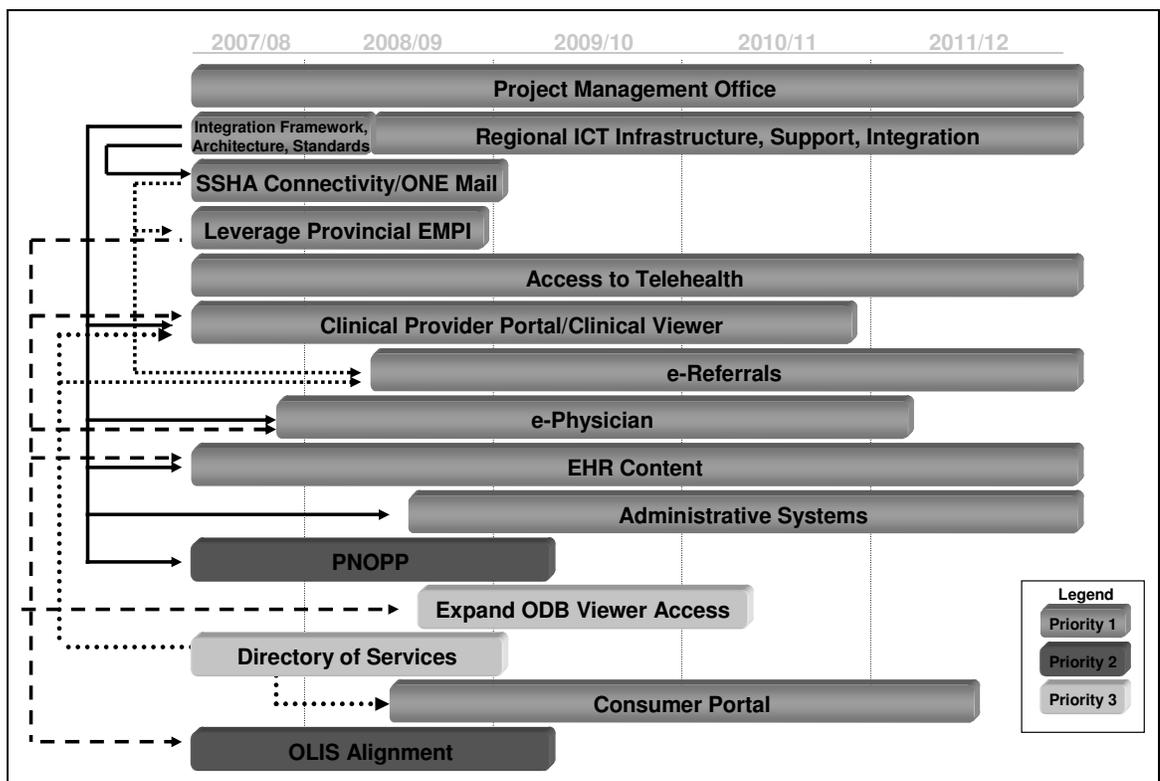


Figure 5: Tactical Plan Overview and Dependencies

## 5.2 Project Management Office

### 5.2.1 Description

It is recommended that a Project Management Office (PMO) be established in Northern Ontario for planning and monitoring the implementation of e-Health ICT projects that span provider boundaries. The PMO is accountable for planning, executing and monitoring of all e-Health ICT projects and processes. The PMO staff will be responsible to develop workplans; manage day-to-day operations, budgets, risks, project implementation, proposal writing, communications, stakeholder engagement; and relationships with consultants (e.g. privacy, technical architect), the LHINs, the LHIN e-Health Leads, and funders.

The Project Management Office needs to be equipped with tools and processes, project management structure with a project management office, project reporting and accountability structure, with assigned resources, funding and schedule. The PMO will manage the scope, cost, quality, and timetable of approved projects and will aid in the development of the business case and project plan for proposed projects. PMO will also provide a key role to plan and deliver the change management program, identify and mitigate risk, manage conflicting requirements for key resources and create a sense of accountability around project schedules. Specific PMO responsibilities include:

- Establish the structure, processes, resources and accountability for the Northern Ontario e-Health ICT Tactical Plan implementation.
- Implement projects that span multiple provider organizations.
- Develops communication, stakeholder engagement, stakeholder readiness assessment and change management plans for regional ICT activities – with a view to maximize technology adoption and uptake.
- Establishes a process for strengthening regional project management experience.

- Accelerates project implementation.
- Drives risk identification, and mitigation.
- Pull together expertise from various organizations as needed in a timely fashion to advance the implementation of projects.
- Secure appropriate ICT capital and operating resources.
- Work with organizations to manage in the case of multiple ICT priority projects.
- Ensure project plans and budgets are realistic for all organizations.
- Set up processes and agreements so that organizations are accountable to their commitments.
- Ensures that lessons learned are applied to subsequent projects.
- Promotes shared systems and ICT support services/infrastructure.
- Optimize the available project management funding from the MOHLTC e-Health Program.

To determine the project tasks, the following criteria will need to be determined for each project:

1. Who is the project sponsor/owner?
2. Have the deliverables, expectations and outcomes been clearly defined by each sector?
3. Have the new business processes been defined (content, process, stakeholders)?
4. Have the project risks been identified by sector?
5. Have the interdependencies been defined by sector?
6. Have the project costs been determined in detail (one-time, operating, on-going support) by sector?
7. Has funding been identified by sector?
8. Have the stakeholder adoption plans been developed to manage politics and promote adoption by sector?
9. Have the physical resources been determined (e.g. hardware, software, interfaces, facilities) by sector?
10. Have implementation plans been developed by sector (e.g. tasks, timing, training, change management)?

## 5.2.2 Implementation Plan

Key implementation activities to establish the regional PMO are:

- Define accountability and governance of the PMO.
- Set up initial PMO for communications and managing initial projects – PNOPP, Directory of Services (DOS), proposals for funding, etc.
- Inventory PMO capabilities across the region.
- Develop the regional approach to PMO.
  - Establish a common approach, methodology, toolkit for regional e-Health implementation and integration by promoting shared systems and common training.
  - Develop Project Charter Outline – to clearly define project structure, responsibilities and accountabilities, deliverables, timelines, resources, success measures.
- Acquire Project Management tools, e.g. Eclipsys.
- Continue with ongoing PMO operations.

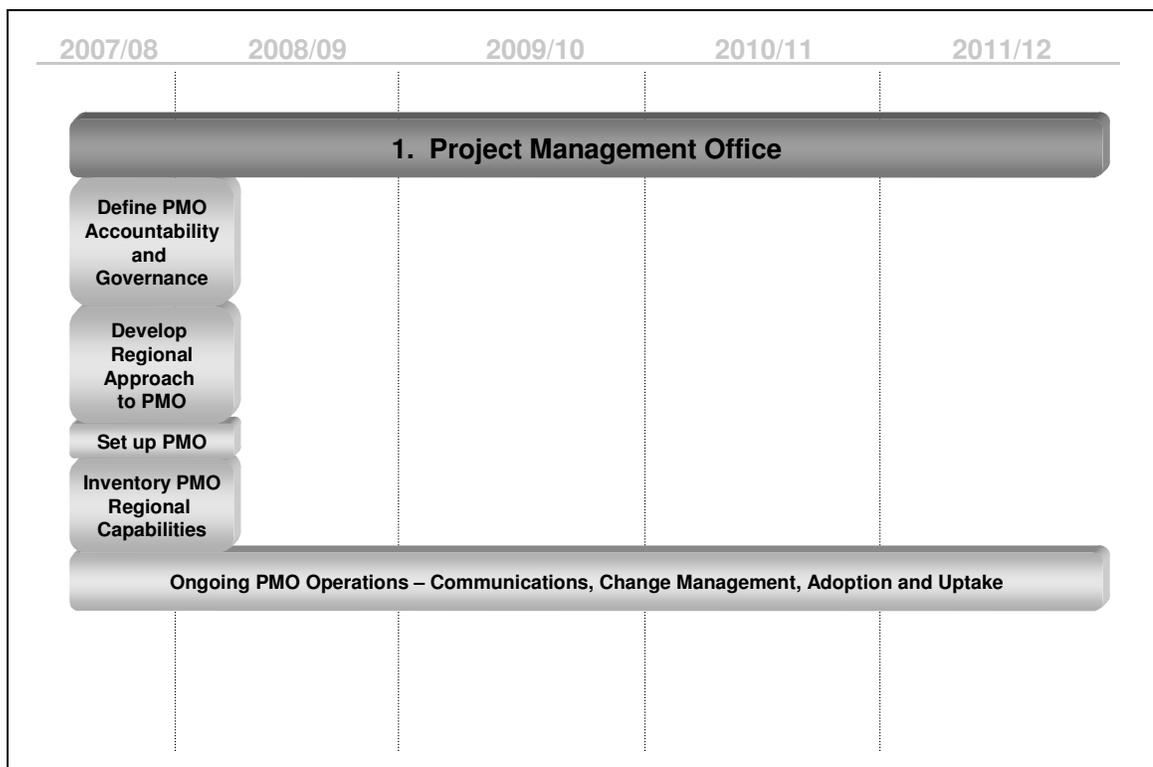


Figure 6: PMO Implementation Schedule

The PMO will be responsible for connecting health service providers to similar resources, training, information, updates which will allow for a more synergistic, sustainable, and accountable e-Health system integration across Northern Ontario.

### 5.2.3 Key Dependencies

An effective, regional project management process is a precursor to all the e-Health ICT Blueprint priority projects. Specific projects may be dependent on predecessor projects being successful and/or there may be other projects for which a project might be on the critical path.

### 5.2.4 Required Resources

- Initial investment of \$50,000 to set up office and \$500,000 ongoing annual costs for a staff of four.
- Costs of setting up a project management office with desktop technology. Assumed that it would be co-located with an existing organization.

### 5.2.5 Stakeholders and Implementation Readiness

Each project will have its stakeholders – sponsors/champions, implementation team, funders, linkages to provincial initiatives and those who will be involved in and impacted by the project. For each project, the potential change faced by each stakeholder group impacted by the project must be identified.

### 5.2.6 Expected Benefits and Outcomes

For each project, projects benefits and outcomes must be identified – both quantitative and qualitative benefits and outcomes for each stakeholder of the project.

## 5.3 Regional ICT Infrastructure

### 5.3.1 Description

The development of a standard technical infrastructure to support the tactical plan is a priority, and is necessary for:

- Building the foundation for the regional EHR.
- Developing integration framework, architecture and standards.
- Defining regional vendor strategies.

The Regional ICT Infrastructure project is required to develop an affordable, workable, integratable technical architecture to support the health service delivery processes. Specifically,

- Minimize systems and optimize these systems.
- Establish standards for system selection/to minimize vendors.
- Support priority areas where information is exchanged, e.g. e-Referrals.
- Leverage where connectivity and integration is available currently, e.g. remote access from to hospital systems from physician systems.
- Specific aspects of the regional infrastructure are:
  - connectivity;
  - secure communication;
  - shared infrastructure, e.g. Data Centres;
  - shared systems;
  - regional support; and
  - framework for integrating legacy systems.

As part of the regional ICT infrastructure, there is also a need to establish a Regional ICT Service (Data Centre, Help Desk, etc.), including the exploration of Regional Data Centre options: leveraging an existing Data Centre, partnering with another LHIN, or leveraging the North West Public Sector Data Centre. The Regional ICT service would:

- Support of system selection and deployment.
- Provide ongoing support of applications and infrastructure.
- Operate or oversee Regional Data Centres and other infrastructure projects.

There are existing ICT groups – North West Health Network (NWHN), North East Ontario Network (NEON), North Bay, and Sault Ste Marie – on whose strengths and experience the regional service could be built. Immediate opportunities to be pursued include formation of a Working Group based on existing ICT services, e.g. 5 large hub hospitals and other ICT leaders in Northern Ontario to get together to do further planning for:

- Shared procurement.
- Infrastructure standards.
- Regional ICT support.
- Cascade the technology as it is refreshed.
- Carry out inventory of infrastructure.
- Develop a vendor strategy.
- Set up sector-based process for vendor rationalization (with cross sector representation).
- Build on Northern Ontario Hospitals Back Office Services (NOHBOS) work and work of existing “shared services”.

Consideration also needs to be given to linking with the ICT planning and implementation work being carried out by the Northern Ontario School of Medicine. In the virtual learning environment of NOSM, medical students need access to NOSM systems from these sites. They may also need access to the HIS of the host organizations. As well, NOSM has been identified as a key partner in the ICT Blueprint in the implementation of ICT needed to support learning, research and clinical decision making processes.

### 5.3.2 Implementation Plan

Key Implementation Activities:

- Establish Regional ICT Infrastructure Working Group.
- Develop integration framework, architecture and standards based on provincial and CHI technical architecture.
- Start a regional shared purchasing initiative.
- Inventory current ICT infrastructure.
- Inventory current ICT services, capacity and capabilities.
- Establish regional ICT support model.
- Implement Regional Data Centres.

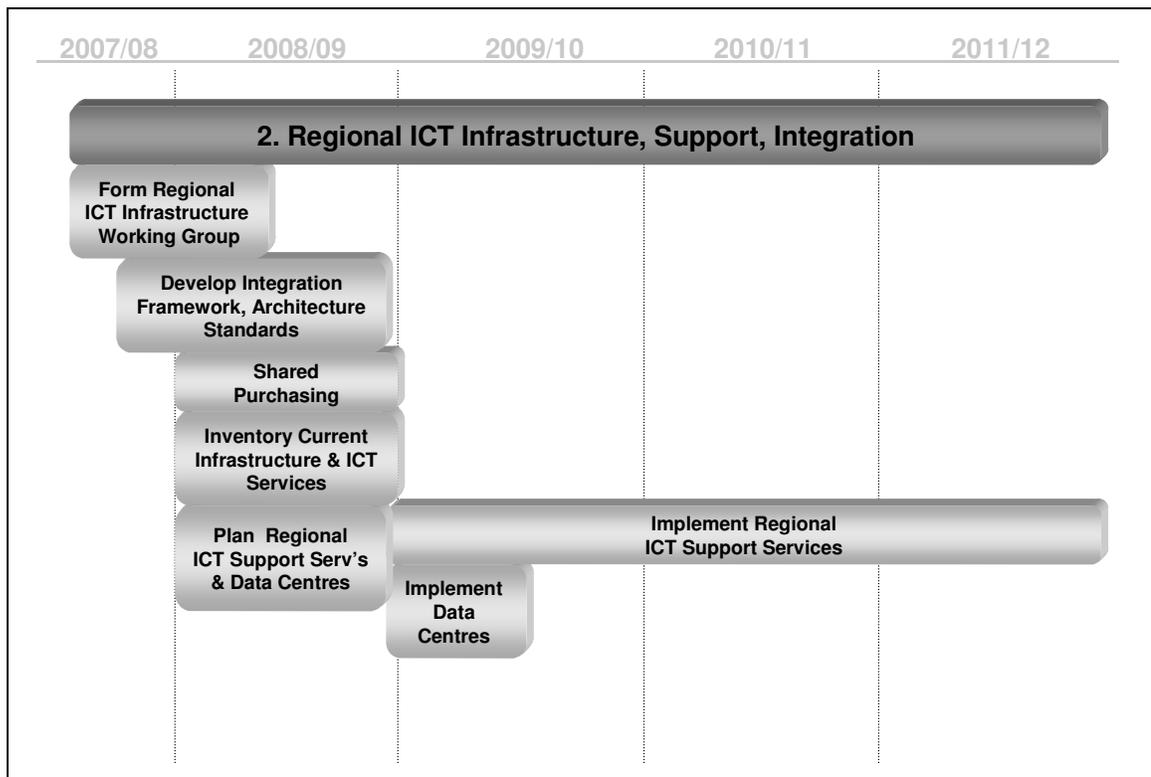


Figure 7: Regional ICT Infrastructure and Support Services Implementation Schedule

### 5.3.3 Key Dependencies

Infrastructure changes to support a regional approach to technology management and support.

### 5.3.4 Required Resources

Initial planning costs would be covered under the Project Management Office costs.

Other resource requirements will depend on the degree of availability and timing of the provincial information systems/elements of the e-Health technical architecture for deployment in Northern Ontario.

### 5.3.5 Stakeholders and Implementation Readiness

This initiative involves all sectors. The evaluation of the readiness of the sectors for the implementation of these initiatives is presented in Appendix G.

The potential is there for the existing PMOs to expand their role (with additional resources) to provide these services for all health service providers in Northern Ontario. Examples of existing ICT support services are: Thunder Bay Shared Services, NEON, Sault Area Hospital, North Bay General Hospital, Northern Ontario Digital Radiology (NORrad), OTN, and SSHA.

#### *Change Management Issues*

- This is a major change for all stakeholders – changing the way they acquire ICT resources (staffing and capital).
- If the current ICT support staff form the core of the future regional services, this will mean a major change for these staff and management.

#### *Project Risks*

Significant new resources and skills sets are required for the major transformation of existing services, e.g. changing the client base and acquiring regional goals.

### 5.3.6 Expected Benefits and Outcomes

This initiative will provide critical support to be able to implement the required systems, as most organizations would not have the technical infrastructure or support to carry out the implementation projects recommended in this Tactical Plan.

## 5.4 SSHA Connectivity and ONE Mail

### 5.4.1 Description

An underpinning of all regional ITC initiatives is connectivity between and within organizations. Basic connectivity is part of SSHA's mandate, and SSHA connectivity should be rolled out as soon as possible. Northern Ontario service providers are advocating for the use of SSHA products to link all health service providers, including all physicians (not covered by the OntarioMD program). The plan targets the achievement of connectivity for Northern Ontario's health service providers by the end of fiscal 2008/2009. Further connectivity, driven by extraordinary bandwidth requirements or by the need for redundancy, should be rolled out in support of the applications being implemented as part of the ICT Blueprint. Specific elements of the SSHA Connectivity and ONE Mail projects are:

- The foundation to secure communication among service providers.
- Promotes communication among service providers as prerequisite step to expanding electronic information sharing.
- Establishes high speed/bandwidth connectivity among providers.
- Leverages current investments.
- Ensures secure communication among providers.

There are two key Northern Ontario projects as part of this initiative:

- Setting up a regional collaborative process for SSHA connectivity and ONE Mail deployment.
- Bundled services to agencies who do not have enough staffing or other resources to implement.

The roll-out sequence needs to be developed. Clear direction should be provided SSHA in Northern Ontario priorities. Some options to achieving connectivity (and these could be mixed and matched) are:

- By geography.
- By sector.
- By circle of care.
- In support of major business process, such as chronic disease management, e-Referral.

The decision-making criteria that should be used in planning the roll-out sequence are:

- Leverage existing investments/functionality.
- Connect those who are ready to be connected – have the tools to make use the electronic connectivity.
- Look for highest impact – e.g. physician office connectivity to the hospital they most work with.

## 5.4.2 Implementation Plan

Key Implementation Activities:

- Development of regional approach with SSHA.
- Project planning and communications.
- Connectivity and ONE Mail for organization with e-mail capability.
- Connectivity and ONE Mail for the rest of the service providers.
- Plan to access other SSHA programs.
- Explore potential for extra funding to accelerate SSHA implementation.

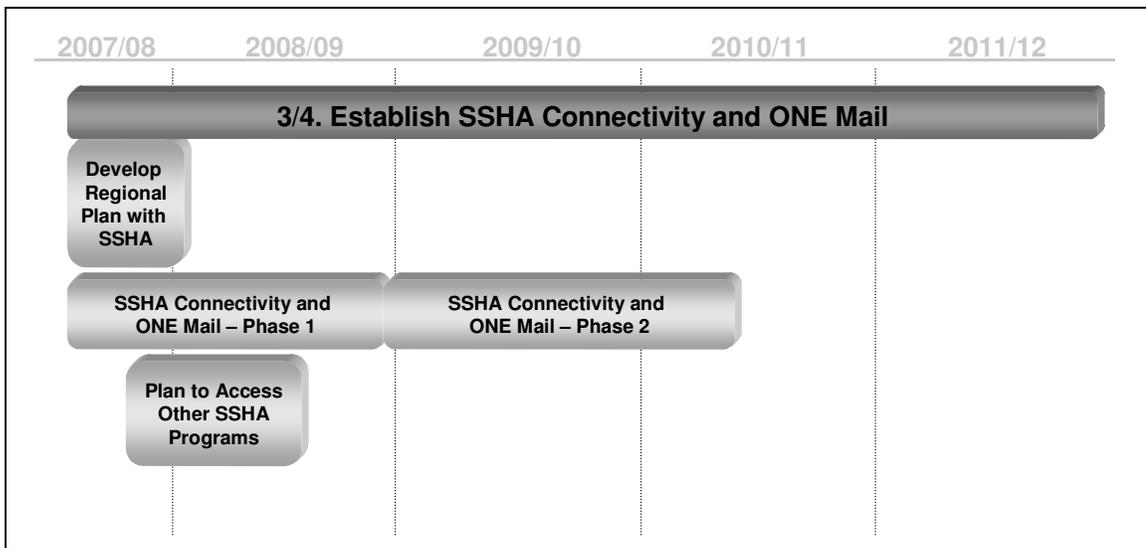


Figure 8: SSHA Connectivity and ONE Mail Implementation Schedule

### 5.4.3 Key Dependencies

- Availability of planning and implementation resources.
- SSHA implementation schedule and resources.

### 5.4.4 Required Resources

It is assumed that the PMO will develop a detailed implementation project plan working with SSHA.

Other resource estimates, presented below, are based on an estimate of the number of organizations that will require SSHA connectivity, the cost of firewalls, implementation project management, training and staff back-fill (for e-mail training). From the survey conducted in the Phase 2 Blueprint project, it is estimated that about 356 organizations will require secure e-mail. Not included is the cost of upgrading existing e-mail systems to Outlook 2003.

Connectivity Costs	
<b>One-time</b> Project management costs and firewall costs for each organization – an estimate inferred, based on the findings of the survey, of organizations not likely to be connected to SSHA. Includes new firewalls for each plus cost to implement: Organizational costs of project management and firewall configuration.	\$1,063,000
<b>Ongoing</b> Ongoing hardware maintenance costs, based on 15% of capital cost of equipment.	\$70,000
ONE Mail Costs	
<b>One-time</b> Project management and staff backfill costs for training: Project management to bridge the organizational and SSHA mail systems, and to do end user registration and training. Backfill cost calculated for staff coverage while on training.	\$3,280,000
<b>Ongoing</b> Assume ongoing training will be incorporated into the existing hiring/orientation process.	\$0

Figure 9-Required Resources for Implementation of SSHA Connectivity and ONE Mail

### 5.4.5 Stakeholders and Implementation Readiness

This initiative involves all sectors.

#### *Change Management Issues*

- High benefit activity whose implementation impacts all stakeholders. However, the impact on most stakeholders is short training on new e-mail systems.
- Organizations need to understand and be comfortable with the concept of giving up their own e-mail system and going to an external service provided by SSHA.

#### *Project Risks*

- Experience shows that follow through is needed to make sure connectivity and e-mail is established.
- Availability of resources.

## 5.4.6 Expected Benefits and Outcomes

- Provides secure communication of confidential information.
- Standard technologies.
- Integration of services and information.

## 5.5 Leverage the Provincial EMPI

### 5.5.1 Description

- The provincial EMPI currently resides at Cancer Care Ontario, in support of the Wait Time Strategy.
- EMPI project will be transitioned to SSHA.
- e-Health Program will be releasing the Client Registry strategy by the end of July 2007.
- Northern Ontario direction is to adopt the provincial EMPI solution.
- Some existing systems may already have this functionality.

### 5.5.2 Implementation Plan

The provincial EMPI project is transferring from Cancer Care Ontario to SSHA. To develop a more detailed plan for the adoption of the EMPI, further discussions need to take place with SSHA.

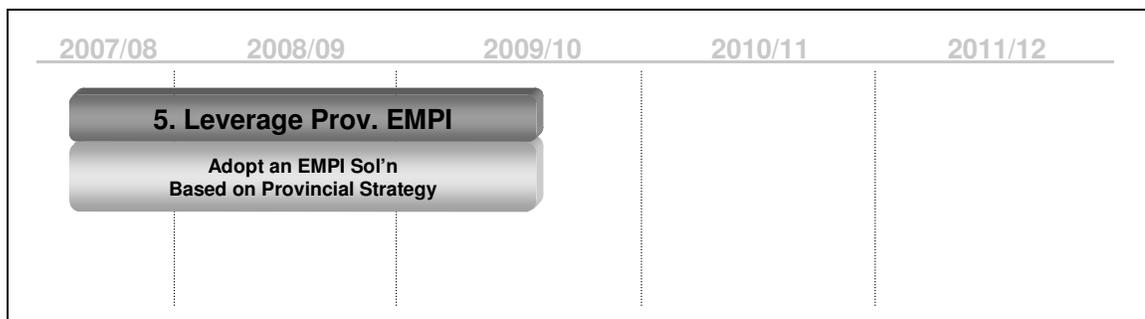


Figure 10: Potential Timing of Adoption of the Provincial EMPI by Northern Ontario

### 5.5.3 Key Dependencies

The adoption of a provincial EMPI solution in Northern Ontario is dependent on achieving connectivity and decisions on standards and infrastructure.

### 5.5.4 Required Resources

Required resources to implement this project are:

- EMPI implementation project management costs, assuming the use of the Initiate EMPI product to be made available provincially by MOHTLC. Interface costs not included, pending decision on implementation approach to be taken.
- One-time cost of this project is estimated at \$7.7 million. Cost estimate is based on number of organizations that likely to need to share information and will need the unique patient identifier. The costs cover the technical time to build interfaces to the provincial EMPI. This amount needs to be reevaluated during implementation planning.

### 5.5.5 Stakeholders and Implementation Readiness

This project will impact all service providers who need to access patient/client information.

## 5.5.6 Expected Benefits and Outcomes

The project will provide the means of uniquely identifying patient and clients across the North, using what is hoped to be a standard, cost-effective, province-wide solution.

## 5.6 Access to Telehealth

### 5.6.1 Description

Telehealth allows service providers to deliver, and patients to receive, services and transmit information over distance. Ontario Telemedicine Network (OTN) and Keewaytinook Okimakanak (K/O) Network uses videoconferencing to deliver clinical, educational and administrative services. Partners include academic health sciences centres, community hospitals, clinics, Aboriginal Health Access Centres, CCACs, long term care homes, psychiatric hospitals, community health centres, educational facilities and public health units.

OTN clinicians use advanced information communication technologies to deliver services such as teliagnostics and specialized telemedicine projects, including emergency telestroke and an electrical burn consult service. OTN has plans to introduce further advanced programs such as emergency and accelerated specialist program, electronic Intensive Care Units, Tele-homecare, and telehealth information services (Store and Forward).

Currently, the Ontario Telemedicine Network has 72 active sites in North East Ontario and 81 active sites in North West Ontario. The types of sites include: CCACs, community support agencies, educational sites, hospitals, LHINs, LTCHs, primary care practices, public health, First Nations, and specialist offices. Most common type of sites in the NE are hospitals – 46%, followed by primary care physicians– 15%. Most common types of sites in the NW are First Nations – 36%, followed by hospitals – 23%. Least number of active sites (based on # of organizations) are long term care homes, and specialists.

Northern Ontario's telehealth services includes the KO Network (the Aboriginal network) which is integrated with OTH and other clinically program driven telehealth services, such as telepathology (UHN), which are not.

There is a need to develop a regional approach to working with OTN,<sup>1</sup> KO, and other systems – for a regional Telehealth program to support access to care/services, and training and education. High opportunity areas, such as mental health and addictions services and connecting primary care, need to be targeted.

### 5.6.2 Implementation Plan

Key implementation activities are:

- Develop regional approach with OTN/KO.
- Project planning and communications with OTN/KO.
  - Basic services.
  - New services.
- Priority project: Basic services to high priority areas.
- Inventory and bring into the regional plan any other telehealth programs (e.g. University Health Network's (UHN) Telepathology service).

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<sup>1</sup> Brown, E., Michaud, J. and Sarsfield, L. Alignment of OTN and ONe-Health Directions. May 2007.

- Ongoing implementation.

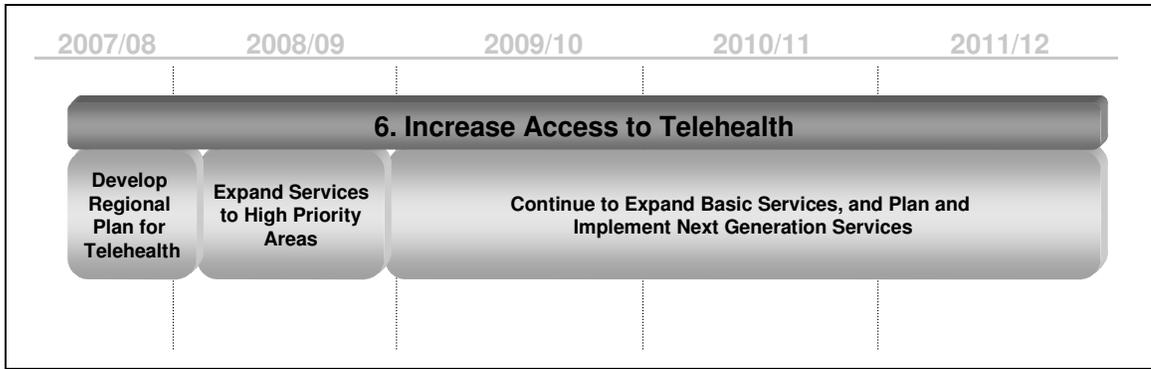


Figure 11: Telehealth Project Schedule

### 5.6.3 Key Dependencies

- Availability of high speed connectivity.

### 5.6.4 Required Resources

It is assumed that the PMO will do the project implementation planning for the expansion of OTN/KO in Northern Ontario working with OTN and KO.

It appears that the organizations covered by this Tactical Plan would be eligible for full membership in the OTN. In that case, OTN would cover the implementation costs. The major cost that OTN does not cover is the local OTN Coordinator. Smaller organizations would be able to minimize these costs by sharing this staff, where the workload and proximity justifies.

### 5.6.5 Stakeholders and Implementation Readiness

All sectors will benefit from Telehealth services. Some change management projects, relating to the implementation of telehealth, will be:

- Marketing and communication of the programs to potential users.
- Readiness of organizations to take advantage of the available technologies.
- Incorporation into clinical practice.

#### *Project Risks*

Implementation to provide coverage for these new types of stakeholders – managing expectations, getting implementation resources, keeping skills where the volume might be low, etc.

### 5.6.6 Expected Benefits and Outcomes

- Eliminates time, distance and geography as barriers to health care for patients.
- Enhances the coordination of service delivery across the continuum of care and provides educational opportunities for providers.
- Tele-homecare enhances clinical quality and reduces ER visits.

## 5.7 Clinical Provider Portal (Clinical View)

### 5.7.1 Description

The Clinical Provider Portal (Clinical View) provides clinicians with a single point of reference for all patient interactions that is easy to access, secure and consolidated. It also provides the ability to potentially view any electronic information available from any service provider. This initiative needs to be supported by the development of Pan Northern Privacy policies to support the sharing of clinical data.

The Clinical Provider Portal can be implemented in phases:

- Provide view access to existing electronic clinical information – Focus on areas where a high volume of clinical information is exchanged, e.g. CCAC-LTCH, LTCHs-hospitals, hospitals-physicians' offices, hospitals-CCACs, Physician-LTCH; hospitals-community mental health.
- Acquire and implement a clinical provider portal solution.

The e-Health Program is in the final stages of developing a provincial Clinical Provider Portal strategy, which will impact how Northern Ontario would roll out this project.

### 5.7.2 Implementation Plan

Key implementation activities are:

- Establish a Privacy Working Group to carry out a Pan Northern project to resolve privacy, consent and data sharing issues.
- A staged plan to provide access to the views of existing clinical information. Priority areas:
  - CCAC/LTCH
  - LTCH/Hospital
  - Physician/Hospital
  - CCAC/Hospital
  - Physician/LTCH
  - Hospitals/Community Mental Health
  - Other sectors
- Carry out an RFP process for a clinical provider portal tool.
- Develop portal implementation plan – by circle of care and/or by sector.
  - Hospital/Hospital; Physician/Hospital; Physician/Long Term Care Sector; Long Term Care Sector/Hospital; Hospital/Community; Hospital/Community Mental Health; among Community agencies.
- Implement the clinical provider portal, including a physician communication portal.
- Expand content as availability of electronic information increases.

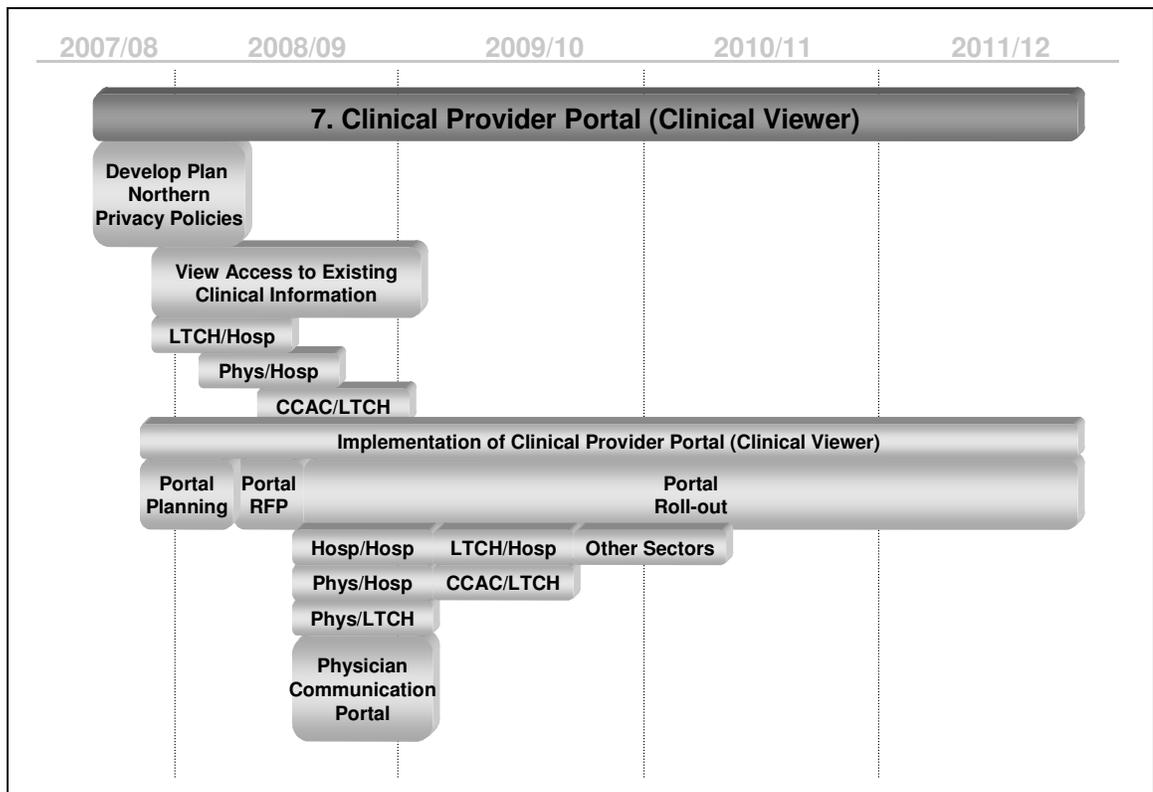


Figure 12: Roll-out Schedule for the Northern Ontario Clinical Provider Portal (Clinical View)

### 5.7.3 Key Dependencies

This project is dependent on the ability of service providers to present information electronically through the portal, and on the speed by which the region can achieve an integration architecture which limits the number of vendors and thus the interfaces to be built to the portal.

### 5.7.4 Required Resources

Required resources are estimated to be \$10.7M with ongoing costs of \$1.9M. This project assumes that there will be a limited number of interfaces.

The project costs are for software licensing for clinical and patient management staff, with a minimum number of interfaces to the portal and project implementation costs. The success of this project depends on an effective vendor strategy, with a resulting minimization of the number of vendors in each sector.

The cost estimates should be revisited following the release of the provincial Clinical Provider Portal (Clinical View) strategy in the Fall of 2007.

### 5.7.5 Stakeholders and Implementation Readiness

This project would impact all sectors.

### 5.7.6 Expected Benefits and Outcomes

- Enhanced quality of care through improved access to clinical information.

## 5.8 e-Referrals

### 5.8.1 Description

A comprehensive e-Referral solution is envisioned that will provide the means for passing information about a patient/client and that patient's/client's care requirements from one health care provider to another.

There is a provincial project underway through the e-Health Program, which will develop an agreed upon definition of e-Referral for Ontario.

For e-Referral to be successful standardization of the referral processes is required. Each e-Referral relationship begins with the development of a working relationship among the referring partners, alignment of business processes, agreement on content, development of tools for sharing data content and, finally, using electronic means to exchange information.

Current e-referral focus in Ontario is on the communication among hospitals, CCACs and LTCHs, since there is a lot of resource utilization pressures related to ALC patients and timely access to CCAC resources and LTCH beds. Other major areas where electronic exchange of referral information could expedite more timely and appropriate access to services are in primary care and in the community support sector.

### 5.8.2 Implementation Plan

Key implementation activities are:

- Develop regional approach to e-referral, based on the provincial strategies.
- Project planning and communications.
- Identify high priority projects for implementation planning.

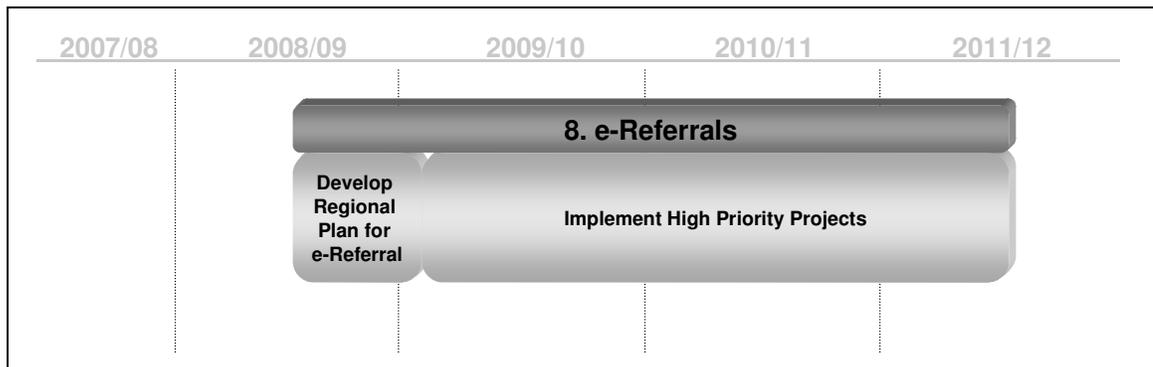


Figure 13: e-Referral Project High-level Schedule

### 5.8.3 Key Dependencies

- SSHA connectivity and secure e-mail.
- A comprehensive DOS for Northern Ontario, presented on the Clinical Provider Portal would help expedite the referral process.

### 5.8.4 Required Resources

Planning for the e-Referral project is included in the PMO costs. The actual costs of the e-Referral solution will depend on the provincial strategy which is currently under development and should be released in October 2007.

## 5.8.5 Stakeholders and Implementation Readiness

This project will affect all service providers, except diagnostic services where it is assumed that an electronic service ordering process will be in place.

This project is important to stakeholders, having identified it as a key project throughout the consultations.

## 5.8.6 Expected Benefits and Outcomes

The key benefit of this project is gaining the ability to pass from one provider to the next appropriate information for an effective referral for services, e.g. discharge profiles, request for services.

# 5.9 e-Physician

## 5.9.1 Description

This project has the broad goal of achieving use of e-Health ICT technologies by Northern Ontario physician, focusing on the physician offices:

- Facilitate physician communication.
- Implement physician office EMR systems – through OntarioMD for Family Health Teams and Groups (aligned physicians), and through a Northern Ontario tactical plan and commitment to achieve the above goal for all physicians.
- Ability to view external reports/results and diagnostic images.
- Ability to integrate into the office EMR external diagnostic reports/results.
- Implement remote access to office clinical records for physicians and physician groups.
- Evaluate specialized devices for physician access to the electronic record.

A key initiative under the e-Physician strategy is the offering of a bundle of services to physicians: One-stop e-Health Shopping Centre offering the bundle of services to support the automation of physician offices and achieving connectivity among physicians and those services to which they need to link:

- Physician Communication Portal.
- Office EMR.
- Clinical decision support/libraries.
- Regional tools, e.g. chronic disease management.
- Access to OTN.
- Access to SSHA.

This “bundled service” could be delivered through a regional ICT service infrastructure, proposed earlier in the plan.

The North is working with OntarioMD to address the issues of system proliferation and information integration challenges – i.e. the need to focus on a small number of vendors – by creating regional standards and requirements. As well, OntarioMD offers support to aligned primary care physicians support to purchase and implement the office EMR – through the

Transition Support Program<sup>2</sup> and EMR Advisor.<sup>3</sup> Figure 13 shows conceptually the transformation of the physician office to a paperless system.

For the e-Physician strategies to be successful, an effective implementation plan needs to be developed working with physicians to:

- Seek external funding for automation of offices.
- Focus on change management and support for the implementation of Clinical Management Systems (CMS), which include registration, scheduling, EMR applications.

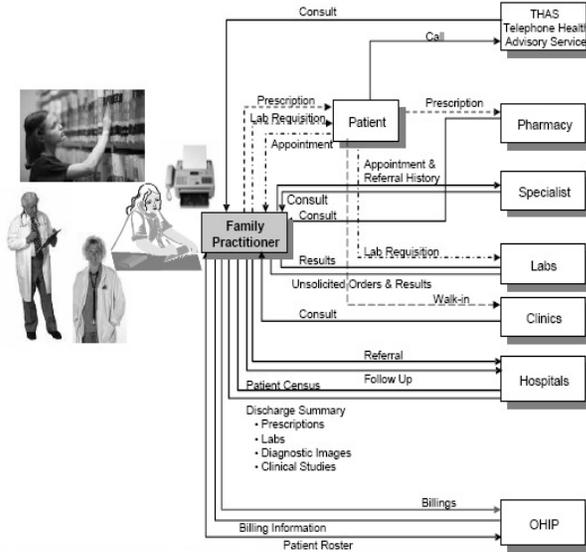
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<sup>2</sup> The Transition Support Program (TSP) supports the adoption of Clinical Management Systems (CMS) for Primary Care physicians in Ontario @ <https://www.ontariomd.ca/portal/>

<sup>3</sup> EMR Advisor is an interactive, online community offering physicians a place to research, ask questions, and communicate with their peers about the adoptions and implementation of Electronic Medical Records (EMR) and Clinical Management Systems (CMS) @ <https://www.ontariomd.ca/portal/>

## OntarioMD Typical Paper-based Office: Paper, Phone & Fax Flow

- Paper files are key to information storage and the fax to information flow.
- The phone is also key to coordinating events: appointments and follow-ups.
- Standalone appointment scheduling and billing via computer are common.



## Connecting to Ontario's eHealth Vision

- Clinical Management Systems (CMSs) are the centre of the practice for record storage and information flow.
- They also become the major channel to coordinate events: appointments and follow-ups.
- Scheduling and billing are integrated with patient records.

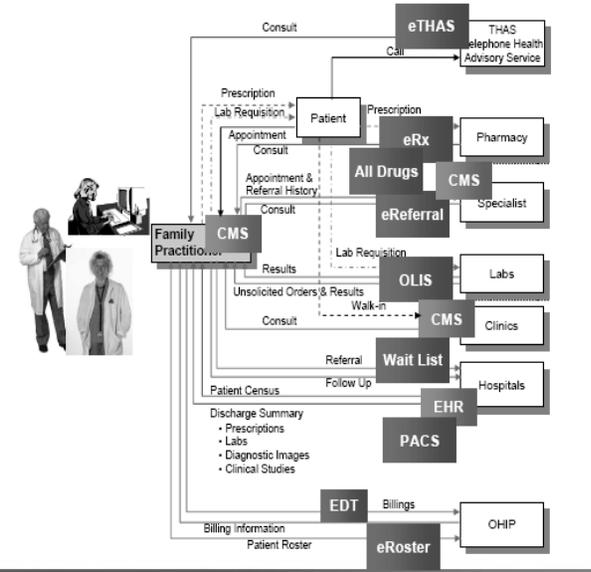


Figure 14: Transformation of the Physician Office (Source: OntarioMD)

## 5.9.2 Implementation Plan

Key implementation activities are:

- Develop e-Physician detailed project plan.
- Establish working relationship with OntarioMD and develop a regional to leverage available funding.
- Develop e-Physician project structure.
- Develop an EMR vendor strategy.
- Seek funding to implement and sustain physician/Nurse Practitioner EMR.
- Establish communication process with physicians in Northern Ontario.
- Develop change management, physician engagement and adoption/uptake program.
- Assist physicians to achieve SSHA Connectivity and ONE Mail.
- Offer bundled services to physicians for the implementation of the Electronic Medical Record and related technologies.
- Building on the OntarioMD EMR Advisor services, offer assistance to physicians in selecting systems compatible with those of the hospital and other key information systems within their circle of care.
- Implement the Northern Ontario Physician Communication Portal (as part of the Clinical Provider Portal (Clinical Viewer)).

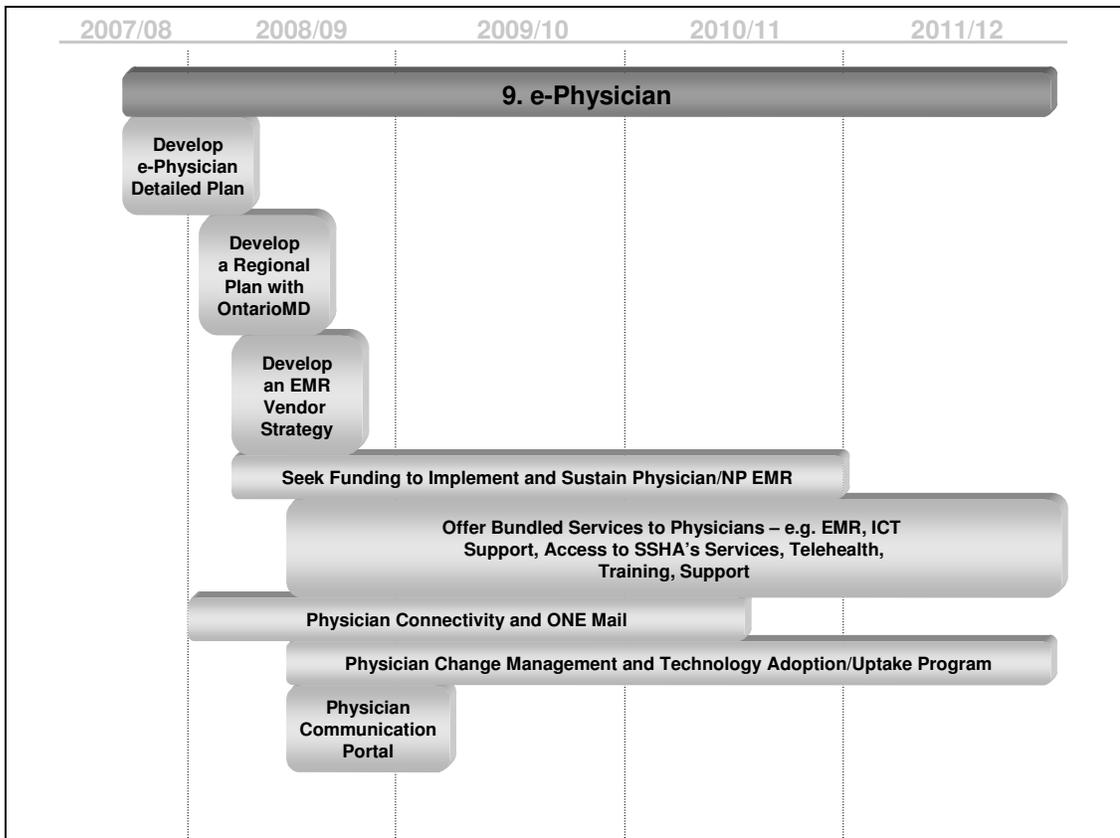


Figure 15: e-Physician Project Implementation Schedule

## 5.9.3 Key Dependencies

- Funding availability for physicians not covered by OntarioMD funding.
- SSHA Connectivity.

- OntarioMD resources.

#### 5.9.4 Required Resources

It is estimated that \$14M will be required over the next four years to equip physicians' offices with Clinical Management Systems (includes registration, scheduling, billing, and EMR functionalities). We based this estimate on 100 physicians acquiring a Clinical Management System (CMS) annually in Northern Ontario, at an average cost of \$35,000 per physician and \$3,000 in annual maintenance costs. This is an estimate only and would vary with the number of physicians in a group and vendor negotiations.

#### 5.9.5 Stakeholders and Implementation Readiness

- All physicians and professional and office staff with whom they work.
- All locations where physicians work.
- OntarioMD.

##### *Change Management*

Physicians are independent practitioners. Their support can be engaged through availability external funding, assurance of a practical approach to implementation, supporting their workflow, and a track record of successful implementation.

##### *Project Risks*

- Need to balance independence of physician practices with the need for integrated systems.
- Commitment from Northern Ontario to advocate for/support the plan for those physicians not eligible for OntarioMD support.

#### 5.9.6 Expected Benefits and Outcomes

- Achievement of integrated view of patient information.
- Availability of information from physician office records.

### 5.10 Electronic Health Record

#### 5.10.1 Description

“Establishing the Electronic Record within individual organizations” and “Establishing the capability to share information among the Electronic Records to facilitate communication and information integration” are cornerstone strategies of the e-Health ICT Blueprint. The details of the applications required to achieve these strategies are listed in the document entitled, “Strategic Opportunity Prioritization”.

The Blueprint calls for maximizing system integration through minimizing the number of vendors within each sector – optimizing the use of current vendors and/or standardizing/minimizing the number of vendors. Currently there is little overlap of vendors across sectors – an indicator that an integrated solution across the sectors may be challenging. The vendor survey currently being conducted will help to test this conclusion. Generally, stakeholders indicated (in Tactical Plan discussion groups) that they felt it was advisable to go one vendor solutions by sector.

Another consideration is that there are certain systems which are mandated – e.g. DATIS Catalyst for Addictions, Purkinje for Community Health Centres, Clinical Information Management

System (CIMS) for Ministry of Children and Youth (MCYS) services (including CCACs and Children’s Treatment Centres), HealthScreen for Aboriginal Health Access Centres – which will may be a barrier to the idea of a single vendor solution by sector.

During the focus groups and survey process, we received contradictory information as to the capability of these systems to achieve a totally digital environment, with some organizations indicating that they had a paperless office, and others indicating that this goal remained elusive. Opportunities to maximize the functionality of these applications should be explored among the service providers. The “Strategic Opportunity Prioritization” document points to other technologies, integrated with the Electronic Record systems, which will enable a totally digital environment.

Generally, the roll out of Electronic Record applications has the following approach:

- Implementing required applications in those community organizations that do not have them – building from foundation applications to advanced applications.
- Replacing legacy applications that are not up to standard.
- Optimizing the available functionality of the applications already implemented.
- Overtime, replacing legacy applications with a small number of systems.

In the North the biggest gaps in the electronic record are in the community support and physician sectors.

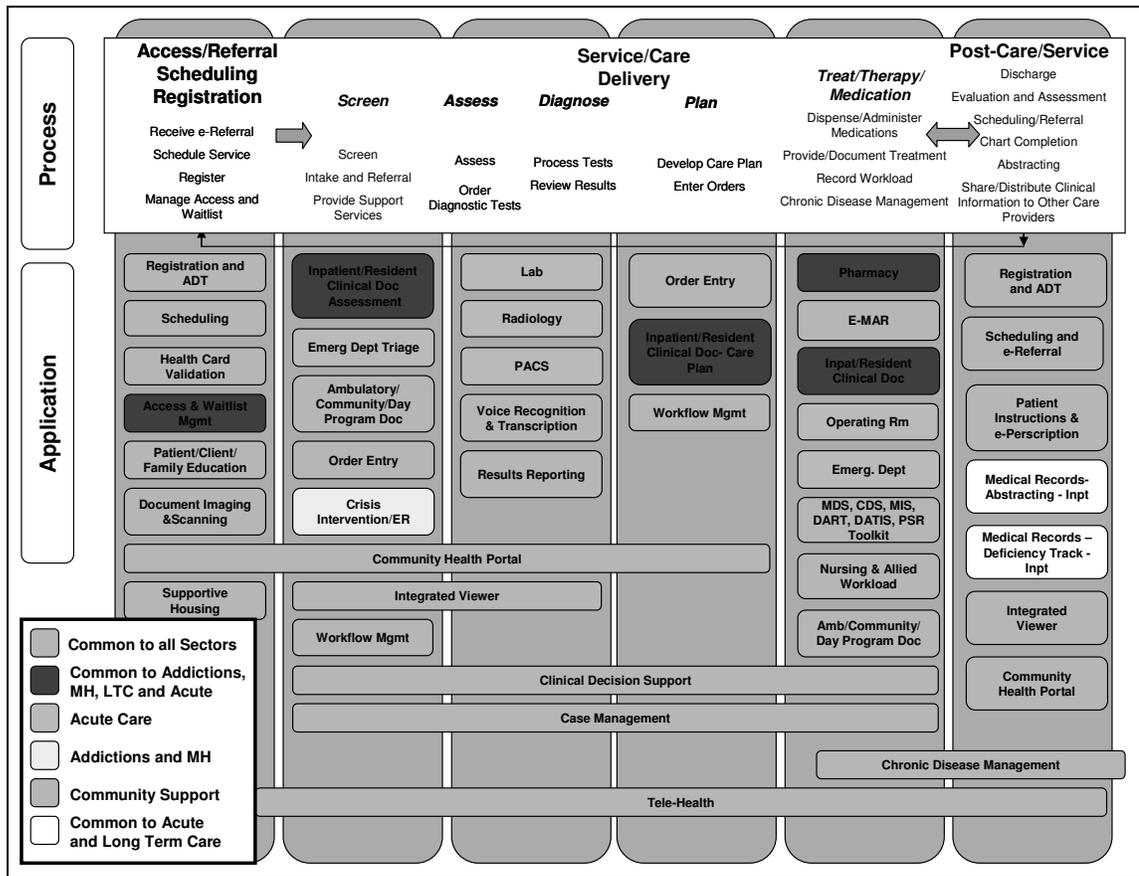


Figure 16: Northern Ontario EHR Applications

## 5.10.2 Implementation Plan

Key implementation activities:

- Set up sector-based groups and process, with cross-sector representation from other sectors to look at the functionality required and recommending a vendor(s) likely to meet these:
  - confirm requirements;
  - identify key vendor(s) for each sector;
  - set up implementation process; and
  - link to regional ICT support project.
- Setting up a process of sharing lessons learned and best practices to prepare a system optimization plan for those applications that are likely to support achievement of the digital Electronic Record.
- Setting up a process of supporting those organizations that do not have the implementing resources or capacity.

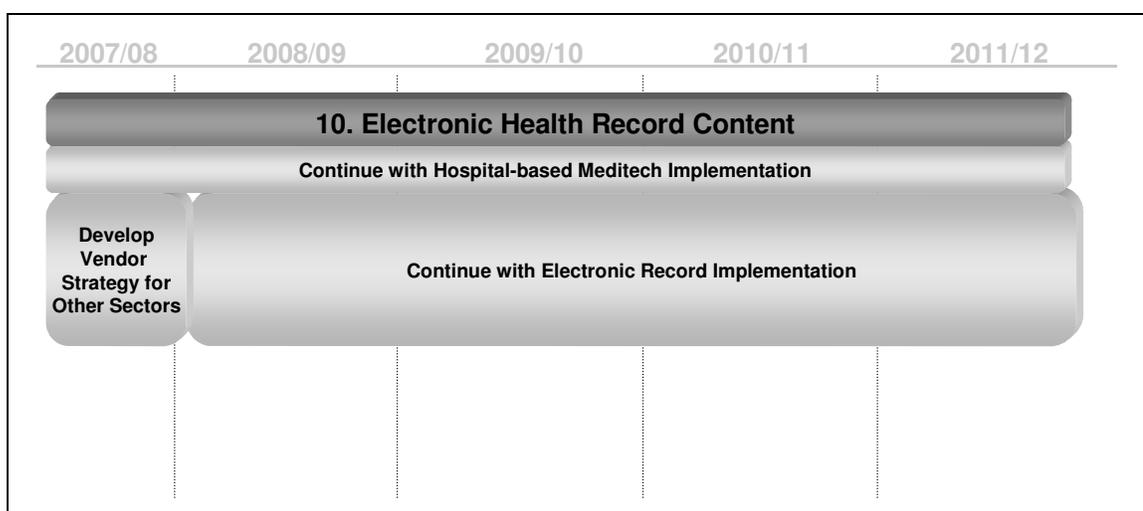


Figure 17: High-level Timeline for Implementation of the EHR

## 5.10.3 Key Dependencies

- Links to the Technology Infrastructure and Support Project.

## 5.10.4 Required Resources

Significant investments will need to be made by individual organizations to become EHR-ready.

- In Blueprint Phase 1, it was estimated the total costs of the implementation of the Blueprint would be \$251M in one-time costs and an annual operating costs of \$73.5M. The sectors covered were the hospitals (including acute, complex continuing care and mental health), PACS, CCACs, CHCs and the GHA. It is estimated that these organizations expended (or were planning to expend) at least \$28M<sup>4</sup> in the last two years. It is also estimated that these organizations are planning to expend at least \$31M<sup>5</sup> in the

<sup>4</sup> NOHBOS ICT Business Case. April 2006.

<sup>5</sup> Based on reports submitted by the larger hospitals in the NE and NW LHINs.

next five years (including fiscal 2007/08), in addition to the investments to be made in the regional DI/PACS repositories.

- An estimate to implement physician office CMS (which includes the EMR) was presented above.
- For the community support and long term care home sector, an estimate was developed based on the number of organizations that do not seem to have a functional, interoperable ECR. The gap was determined based on the responses to the survey conducted in the Blueprint Phase 2 project. The cost of implementing the electronic record in this sector is estimated to be about \$21M, including training and support costs. The ongoing maintenance costs are estimated at \$3.2M.

### **5.10.5 Stakeholders and Implementation Readiness**

This is a major undertaking for the health service providers in Northern Ontario.

This project faces risks from unavailability of funding to carry out the tasks, lack of commitment from senior administrators across the sectors, commitment of resources, and competition from multiple other priority projects.

### **5.10.6 Expected Benefits and Outcomes**

- Achievement of the vision for information integration along the continuum of care.
- Minimizing vendor integration and interfacing issues.
- Cost effective solutions.
- Rational approach to technology support and infrastructure.

## **5.11 Administrative Systems**

Administrative systems are generally defined as those non-clinical systems required to support planning, operations and evaluation of health care services, e.g. financial, human resources, supply chain, environmental services, and business intelligence.

### **5.11.1 Description**

- Address the gaps in applications to support service delivery and business management.
- Support regional goals for shared services.
- Set up processes for:
  - Vendor standardization and minimization.
  - Implementation.
  - Regional ICT support.
- Implementation of systems that support regional/shared systems, i.e. NOHBOS projects.

## 5.11.2 Implementation Plan

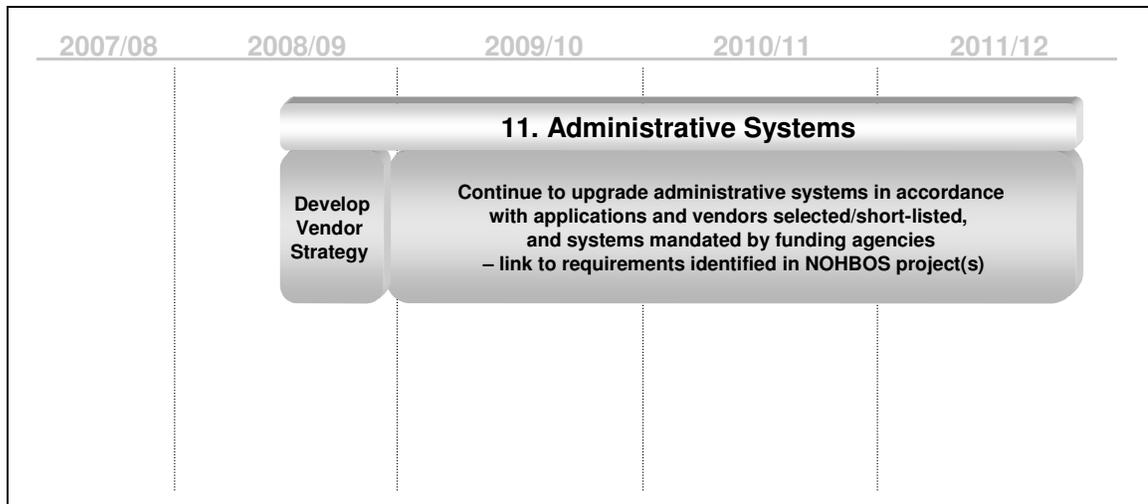


Figure 18: High-level Schedule for Automating Administrative Processes

## 5.11.3 Key Dependencies

- Connectivity
- Standards
- Vendor strategy

## 5.11.4 Required Resources

The cost of administrative systems depends on a variety of factors including the degree to which shared systems will be implemented among the health service provider organizations.

## 5.11.5 Stakeholders and Implementation Readiness

All service providers, especially those within the LHIN mandate, could potentially be involved in this project.

## 5.11.6 Expected Benefits and Outcomes

Standard systems will make data sharing possible, enabling system-wide projects such as system-wide management information reporting.

## 5.12 PNOPP

### 5.12.1 Description

PNOPP is the Pan Northern Ontario PACS Project, whose implementation is currently underway. Northern Ontario is currently establishing the PMO and implementation structure. Detailed plans are available from the project leadership.

## 5.12.2 Implementation Plan



Figure 19: PNOPP Implementation

## 5.12.3 Required Resources

PNOPP is a funded project.

## 5.13 Expand ODB Viewer Access

### 5.13.1 Description

This project is the expansion of the Emergency Room ODB Reviewer project to other service providers who would value having access to this information.

- Identified as a lower priority area by the focus groups, benefits were questioned.
- Identified as a high priority project by the e-Health Program.

### 5.13.2 Implementation Plan

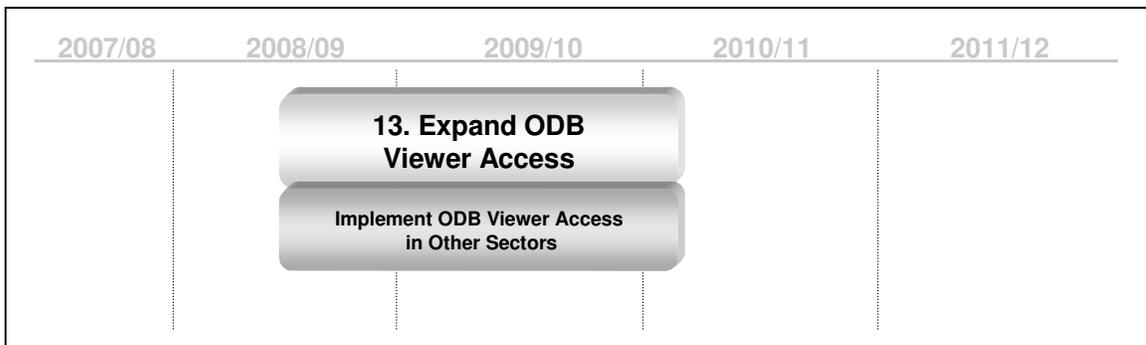


Figure 20: Potential Timing of the Expansion of the ODB Viewer Project

### 5.13.3 Required Resources

It is assumed that since this is a provincial project, the implementation costs would be covered.

### 5.13.4 Expected Benefits and Outcomes

- Access to drug profiles within ODB.
- Some stakeholders have questioned the value of this access – mentioning that the database does not include drugs that the patient has paid for; database is for the patients over 65.
- More value placed on e-Prescription.

## 5.14 Directory of Services

### 5.14.1 Description

The Northern Ontario Directory of Services of health and related service providers is a single source of information regarding health services available within the two LHINs across the health sectors.

Directory of Services (DOS) is a current project in Northern Ontario, under the sponsorship of the CCACs. The project builds on the successful launch of a DOS of French Language Service providers in North East Ontario – CircuitSanté, a project managed by the NE CCAC and its predecessor organizations.

An implementation plan has been developed and is available for the establishment of the Northern Ontario DOS. Key recommendations that resulted from the project are:

- 211North will be the DOS for health service providers in Northern Ontario. 211North database will be customized to meet the content requirements identified during the project.
- CircuitSanté will be the French Language database for Northern Ontario and will feed the 211North database. CircuitSanté will be maintained by the NE CCAC.
- The NE and NW CCACs will partner with 211North for the provision of DOS for health service providers and users in Northern Ontario.
- Funding and data partnerships will be formed to comprehensively cover the geography of Northern Ontario as defined by the LHIN 13 & 14 borders.
- The DOS should link to service provider information for the rest of Ontario to support referrals made to other geographic jurisdictions in Ontario and linkages should be provided to service provider information in Manitoba.
- Continue to enhance 211North and CircuitSanté to support the broader I&R processes.

## 5.14.2 Implementation Plan

	2007			2008				2009			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Agreement between CCACs and 211North											
2. Agreement on content and other features											
3. Confirm database hosting and other support											
4. Seek additional funding											
5. Align functions between 211North and CCAC I&R											
6. Combine the 211North and CircuitSanté, core functional enhancements											
7. Data population of CircuitSanté with NW data											
8. Communications and engagement											
9. Refinement of DOS						x					
10. DOS GO LIVE											
11. 211North GO LIVE				TBD			Rest of 807 & West 705				Rest of 705

Legend: TBD - Thunder Bay and District; 807 - 807 area code; 705 - 705 area code  
Source: Northern Ontario DOS Draft Final Report, June 2007

## 5.14.3 Key Dependencies

This is a somewhat independent project, but would benefit from being accessible through both the clinical/provider and consumer portal.

## 5.14.4 Required Resources

The original funding that 211North has received to roll-out its original plan covers Manitoba border to Hudson Bay, James Bay, Sault Ste Marie and Sudbury. Additional one-time and ongoing funding will be needed to cover the area to the Quebec border and to broaden the Aboriginal language capacity. Resources are required to extend the French Language Services content to the rest of North East and North West Ontario. The required funding may be sought from FedNor, Health Canada, MOHLTC, LHINs, CCACs, Ministry of Health Promotion, Ministry of Finance, Northern Development and Mines.

The one-time costs of the project are estimated to be \$560,600, \$300,000 of which is for the expansion of the CircuitSanté database to the rest of Northern Ontario. Ongoing operational costs are \$205,000 for the first full year of operations. The costs increases, year to year, are due to anticipated inflationary increases.

A funding proposal has been made to Health Canada to cover both the one-time and additional on-going costs of the CircuitSanté database.

## 5.14.5 Stakeholders and Implementation Readiness

All sectors would be affected by this project.

A key change management strategy would be the marketing and communications to engage service providers to be included in the database, and to use the database effectively.

### ***Project Risks***

- Requires ongoing data refresh process.
- Requires funds for ongoing maintenance of the database.

## **5.14.6 Expected Benefits and Outcomes**

The DOS provides support for consumers and service providers seeking access to the health system.

- Supports consumers seeking referral and consultation services and follow-up information.
- ENHANCES access to the healthcare system.
- IMPROVES coordination among the sectors and individual providers.

## **5.15 Consumer Portal**

### **5.15.1 Description**

The Northern Ontario Consumer Portal would provide a central point of access to direct local patients to a range of resources regarding the health services available within Northern Ontario and positions the LHINs to deliver patient-specific information to patients for self management.

The Consumer portal:

- Supports goals of chronic disease management and prevention, self care.
- Public's access to information.
  - Public domain information.
  - Secure communication and access to health information.
- Supports e-Referral processes.
- Accesses the Directory of Service.
- Infoway interest in funding consumer portal projects – accelerating patient access to quality care, reducing wait lists.

### **5.15.2 Implementation Plan**

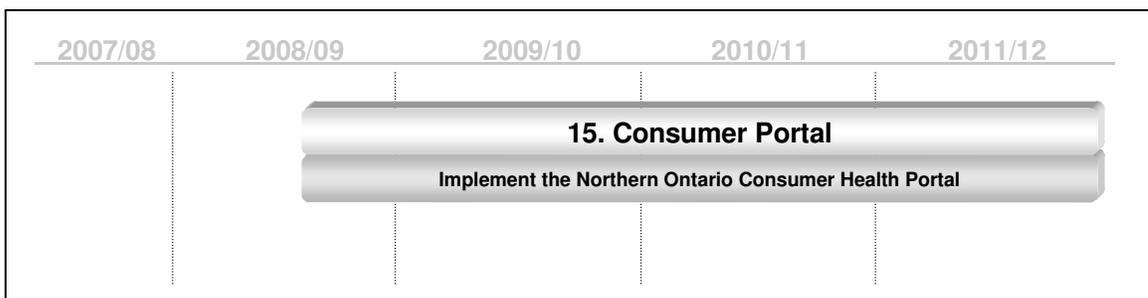


Figure 21: Overall Timelines of Northern Ontario Consumer Portal Implementation

### **5.15.3 Key Dependencies**

A key dependency of the consumer portal would be the availability of connectivity to consumers – to be able to access the portal on the internet.

### 5.15.4 Required Resources

The costs of implementing a consumer portal for Northern Ontario have not been estimated at this time.

### 5.15.5 Stakeholders and Implementation Readiness

All sectors and all residents could potentially be impacted by this project. The launch of such a portal would need to be supported by an effective communication plan.

### 5.15.6 Expected Benefits and Outcomes

- More informed and activated residents of the LHIN with enhanced ability to manage their own health, and better access to information concerning diagnosis, treatment, and follow-up.
- Residents have access to resources regarding how and where to access services and the ability to communicate with selected providers which reduces the need for encounters with the health systems.
- Optimized appointment schedules to improve consumer satisfaction.

## 5.16 OLIS Alignment

### 5.16.1 Description

The key aspects of this project are:

- Getting hospital sites ready for implementation of OLIS.
- Physicians will not be able to take advantage of the provincial laboratory database if they do not have the appropriate systems in their offices.

### 5.16.2 Implementation Plan

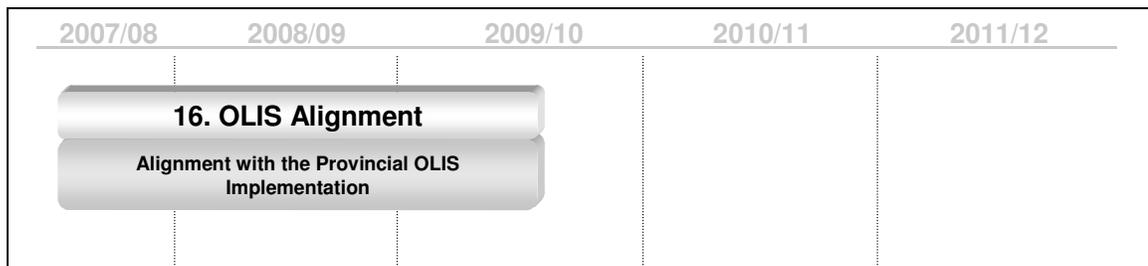


Figure 22: Potential Timing of Linkage to OLIS

### 5.16.3 Key Dependencies

- This project links to the e-Physician project.
- Ability of legacy systems to interface with OLIS.

### 5.16.4 Required Resources

It is assumed that since this is a provincial project, the implementation costs would be covered. The costs of getting hospital and other systems ready to interface with OLIS have not been estimated.

### **5.16.5 Stakeholders and Implementation Readiness**

Ability of hospitals and other service providers who order and receive laboratory test results to link to OLIS depends on having an electronic chart which can be interfaced to OLIS.

### **5.16.6 Expected Benefits and Outcomes**

- Timely access to laboratory test ordering and results – comprehensively for each patient, no matter where the test is ordered or the specimens are tested.

# 6. Governance

## 6.1 Governance Principles

The principles that the Steering Committee used in developing the recommended governance model were:

- includes all stakeholders from across the continuum of care;
- supports expeditious planning and implementation of the Blueprint directions;
- has a structure and process for communication and input from the stakeholders;
- advocates for and supports a change management and adoption/uptake program to support the implementation of the e-Health ICT Blueprint;
- leverages current strengths, structures and experience in Northern Ontario;
- promotes an integrated approach in Northern Ontario, while respecting the unique circumstances of communities and service providers;
- supports LHIN accountability agreement for e-Health; and
- is proactive in supporting adoption of innovative technologies that are of benefit to health information management in Northern Ontario.

## 6.2 Proposed Governance Structure

The Steering Committee is proposing the creation of a new ONE-Health Steering Committee for Northern Ontario, which has already been under discussion by that Committee. The new Committee would have multi-sectoral representation with linkages to the e-Health ICT Advisory processes that each LHIN needs to establish.

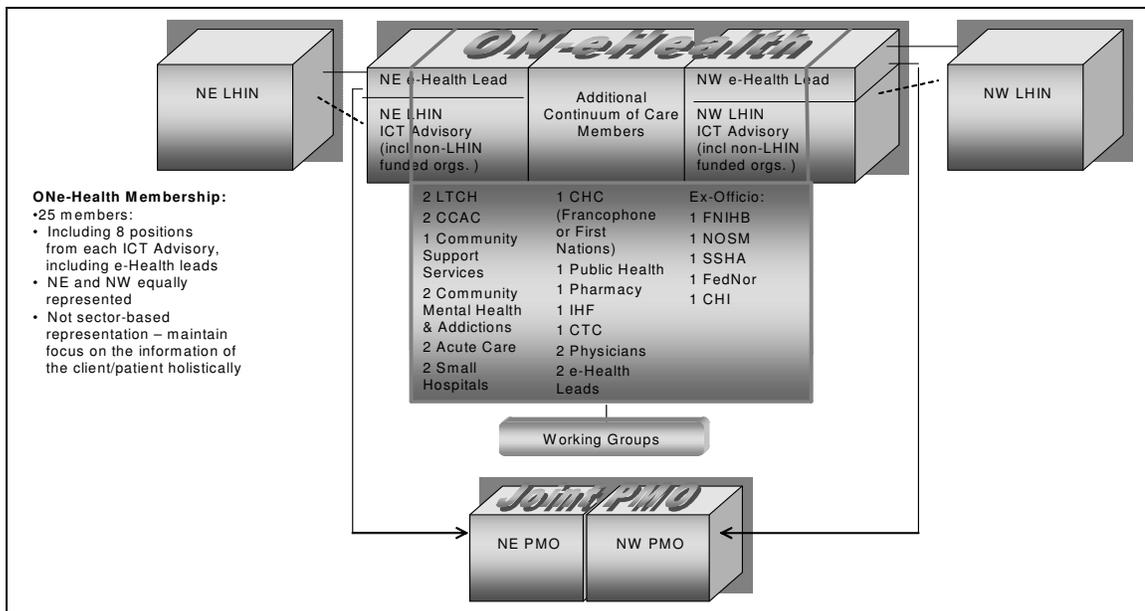


Figure 23: Governance: Structure and Membership

The PMO would report to the NE and NW e-Health LHIN Leads. The ONE-Health Steering Committee, would be supported by a Working Group structure responsible for the key tactical planning projects, e.g.

- Privacy.
- e-Physician.

- Regional ICT Infrastructure – SSHA connectivity/liaison, OTN/Telehealth, shared purchasing, standards, shared regional support, Data Centre.
- Clinical Provider Portal/Clinical Viewer and EHR.
- Electronic Health Record Content roll-out.
  - Membership to include OTN.
  - PNOPP.
- Directory of Services.
- Communication and Advocacy.

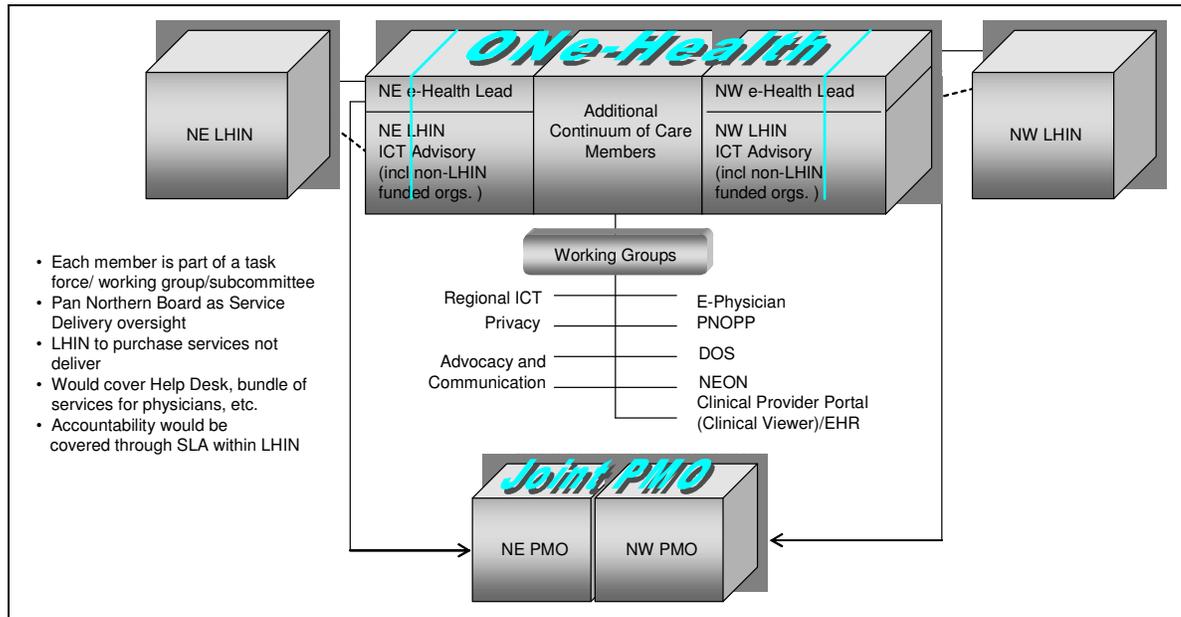


Figure 24: Governance: Overview and Details of Engagement

### 6.2.1 One-Health's Reporting Relationships

- One-Health reports to its shareholders – the two LHINs, its constituent organizations.
- Continue with this membership until the two LHINs organize their committees. Then there may need to be change in membership.
- Advantage that the committee would be in place and there would be an interim process.
- New One-Health would become initial Board of Directors for the NewCo, responsible to two LHINs, public and to member organizations.

### 6.2.2 Relationship to Existing Shared Services and Organizations

- LHIN would have the accountability to the MOHLTC – wait times, OLIS, etc.
- LHIN could direct the relevant organizations to put these in place (directly between LHIN and hospital/other organization) or contract with One-Health to coordinate the activity across the North, through the PMO.
- Need to establish accountability between existing structures and ICT Tactical Plans.
- Leverage and coordinate with existing shared services.
- Purchase services, as required, from NEON, SSHA – e.g. through Service Level Agreements.

## 6.3 Working Groups

The Working Groups, reporting to the Steering Committee, would be responsible for:

- Planning, and execution of a project or a service (if a regional project).
- Developing the regional framework for the project.
- Carrying out change management planning to ensure adoption and uptake of the new technologies under their purview, including adequate training and support.
- Seeking any required additional funding.
- Working with vendors, if necessary.
- Ensuring appropriate hand-off of projects, if required.

## 6.4 Benefits of the Recommended Governance Structure and Processes

The benefits of the recommended of governance structure and processes are:

- Takes advantage of existing structures.
- Builds on LHIN ICT Advisory processes.
- Supports LHIN accountability.
- Support recommendation that ONe-Health member expand.

## 6.5 Ongoing Effectiveness of ONe-Health

- Investment in effective committee performance.
- Education in e-Health and updates.
- Role description for members.
- Role in communication, representing the Tactical Plan roll-out.
- Involvement/leadership of Working Groups.

## 6.6 Next Steps

- Make the governance recommendations to ONe-Health.
- Depending on decisions taken by ONe-Health: morph the existing committee OR create a new Pan-Northern ICT Committee.
- Develop the governance structure further with the LHINs – structure, NewCo., agreements.
- Ensure accountability in compliance with IHSP, accountability agreements, provincial e-Health strategies, ICT Blueprint and Tactical Plan.
- Review in six months to assess whether expectations are met.

## 7. Costing

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The following chart (Figure 24) outlines the one-time costs and on-going costs for each priority project.

