Health PEI

Strategic IM/IT Plan

2014-2017
Message from the Chief Information Officer

With the release of its 2013-2016 Strategic Plan, Health PEI articulated its vision, mission, values, goals and objectives for the coming years. This Strategic IM/IT Plan supports Health PEI’s vision and outlines the focus of our near-term Information Management and Information Technology priorities. These IM/IT investments are key enablers for an integrated, safe and high-performing health system.

While we have accomplished much in recent years relating to the implementation and adoption of IM/IT solutions, there is still much work to be done. It is my hope that this document will serve to provide directional and decision-making support for the organization and will facilitate important conversations among Health PEI’s stakeholders. With broad engagement in IM/IT decision-making, we can derive optimal value from our investments and enable a world-class health system in Prince Edward Island.

Respectfully,

Liam Whitty
Chief Information Officer, Health PEI
# Table of Contents

1. Introduction ........................................................................................................... 4
2. IM/IT Progress to Date ......................................................................................... 6
3. Critical Success Factors ....................................................................................... 7
4. Guiding Principles ................................................................................................. 8
5. Strategic Direction ............................................................................................... 10
   5.1 EHR Evolution ................................................................................................. 10
   5.1.1 Closing Existing EHR Gaps ..................................................................... 10
   5.1.2 Expanding the EHR Footprint ................................................................. 11
   5.2 Supporting Technology .................................................................................. 12
   5.3 IM/IT Governance, Privacy and Information Access ...................................... 13
   5.4 Evolution of Business Intelligence ............................................................... 14
6. Ongoing IM/IT Management ............................................................................... 15

Appendix A. Health PEI Strategic Plan Summary .................................................... 16

Appendix B. EHR Current-State ............................................................................. 17
   Appendix B.1 EHR Current-State Architecture .................................................... 17
   Appendix B.2 System Descriptions ...................................................................... 18
1 Introduction

1.1 Purpose

Health PEI’s Strategic IM/IT Plan 2014-2017 describes the overall strategic direction for the health information and technology management portfolio within Health PEI. Furthermore, this document guides the development of detailed business and operational plans for information and technology management and provides the basis for reporting and accountability on performance and results.

For the purpose of this strategic plan, Information Management (IM) is defined as the planning, organizing and controlling of data and information. Information Technology (IT) refers to the application of technology components such as hardware (computers, peripherals, networks, etc.) and software (commercial or in-house developed applications) to facilitate the capture, storage, use and communication of personal health data and information.

1.2 Background

The November 2013 Prince Edward Island (PEI) Government Speech From The Throne outlined the province’s health care direction:

“My Government remains firmly committed to more direct and easier access to programs and services for Islanders. Significant system improvements have been made in recent years that are providing better access and better care now. Over the coming year further reforms and system changes will be made to bring about an increasingly patient-centered health system.

... Over the coming year, Government will continue to work together with health care professionals in an effort to make our services more efficient and patient-oriented...”

The Health PEI Strategic Plan 2013-2016 establishes a vision of “One Island health system supporting improved health for Islanders”. Health information is a strategic resource that must be managed to ensure that the right information is provided to the right person at the right time. Providing accurate, comprehensive and accessible information to Island clinicians (physicians, nursing and allied health care providers) helps ensure the best possible health outcomes for the citizens of PEI. This information also facilitates the measurement and reporting of health system performance and supports the effective allocation of Island resources.

The PEI government is committed to a single, integrated system of care that is grounded in evidence-based decision making, enhances access to services, and is focused on improving the health of Islanders. This Plan supports and aligns with Health PEI’s strategic mission, values, vision and goals (summarized in Appendix A) and the Provincial Government’s commitment to investing in health care in support of One Island Health System.
1.3 PEI’s EHR

PEI’s IM/IT portfolio includes several components:
- e-Health/EHR strategy, prioritization, implementation, operations and governance
- Collaboration with IT Shared Services (ITSS) and third-party organizations
- Privacy and Information Access
- Health Analytics

The primary strategic component of PEI’s IM/IT portfolio is its ongoing investment in a series of provincial, integrated/interoperable information systems known collectively as the **Electronic Health Record (EHR)**. The EHR serves as an electronic record that provides each individual in Canada with a secure and private lifetime record of his or her key health history and care within the health system. The record is available electronically to authorized health care providers and the individual anywhere, anytime in support of high quality care.

The work to create and evolve PEI’s EHR involves integrating health information from numerous systems to provide one coherent record for Islanders and their authorized health care providers – thereby integrating the circle of care.

PEI’s EHR helps to improve the consistency, speed and quality of care provided to Islanders. EHR benefits include reduced wait times, fewer duplicate tests, improved access to services, better management of chronic conditions and enhanced patient safety. For Islanders, this means better, safer care and improved health outcomes.

---

1 EHRS Blueprint: An Interoperable EHR Framework, Canada Health Infoway, July 2003, p. 164.
2 IM/IT Progress to Date

Health PEI has made significant progress in recent years with regards to managing its IM/IT portfolio. In early 2011 the organization added a full-time Chief Information Officer (CIO) and later that year formed the IM/IT Leadership Committee. Chaired by the CIO and reporting to Health PEI’s Executive Leadership Team, this committee includes senior leaders from across the organization and provides guidance, prioritization and oversight for the IM/IT portfolio. The committee has also recently begun a collaboration initiative working with ITSS leadership to improve IT service delivery.

From an e-Health implementation and operations perspective, Health PEI has achieved many significant milestones and the majority of PEI's EHR components are already in place:

**PEI EHR Component Implementations**

<table>
<thead>
<tr>
<th>Go-Live</th>
<th>System</th>
<th>Provide-wide Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>Client Registry</td>
<td>Main source of individual demographic data</td>
</tr>
<tr>
<td>2002-03</td>
<td>RIS/PACS</td>
<td>Diagnostic imaging scheduling, documentation, image repository</td>
</tr>
<tr>
<td>2003-04</td>
<td>ISM</td>
<td>Case management and financial benefit adjudication outside of acute care</td>
</tr>
<tr>
<td>2008</td>
<td>DIS</td>
<td>Profiles for all community-based medication prescriptions</td>
</tr>
<tr>
<td>2008</td>
<td>Cerner CIS</td>
<td>Multiple Integrated solutions covering hospital in-patients, pharmacies &amp; labs</td>
</tr>
<tr>
<td>2009-11</td>
<td>Cerner CIS</td>
<td>Integrated emergency and surgery solutions</td>
</tr>
<tr>
<td>2012-14</td>
<td>Cerner CPOE</td>
<td>Integrated Computerized Provider Order Entry (CPOE) for all order types; Electronic Medication Administration Record (eMAR)</td>
</tr>
</tbody>
</table>

As a result of these investments, PEI is the leading jurisdiction in Canada with regard to the deployment and adoption of EHR solutions within acute care, having a HIMSS Analytics EMRAM score of 4.285\(^{ii}\). What this means in layman’s terms is that all PEI hospitals are in the top 4% of all Canadian hospitals with respect to the extent of their adoption of electronic health records.

The recent on-time and on-budget implementation of CPOE across the province also demonstrates how far PEI has come regarding e-Health delivery. Since ending in June 2014, the project has already won the following awards:

- Canadian Health Informatics Awards – Project Team Implementation Award
- Canada Health Infoway (Infoway) – Accelerate Challenge Award
- Cerner – ACE Physician Improvement Award

While it has been a challenging journey and there is still much work to be done, PEI stakeholders can be proud of what has been accomplished to date. As a province, PEI is well-positioned to be a model site for how technology can be used to transform the delivery of health care.

\(^{ii}\) [http://www.himssanalytics.org/emram/scoreTrends.aspx](http://www.himssanalytics.org/emram/scoreTrends.aspx)
3 Critical Success Factors

The following critical success factors are essential to realize this Strategic IM/IT Plan’s objectives.

3.1 Strong Leadership

Senior Leadership support for Health PEI’s vision of “One Island health system supporting improved health for Islanders” and this supporting Strategic IM/IT Plan is critical for achieving standardized clinical practices and implementing integrated, provincial solutions for Island clinicians. The recent displays of wide-spread and strong leadership relating to CPOE implementation are great examples of what it takes to ensure success for these IM/IT investments.

3.2 Engaged Stakeholders

Successful execution of this plan requires engagement and support from clinicians and the leadership groups that govern and guide the clinical community. Clinical engagement is critical in the identification of requirements and the effective design, testing and implementation of IM/IT solutions. These groups are also the primary enablers for enterprise-wide clinical adoption and support. Other supporting stakeholder groups include Health PEI’s Board of Directors, the Department of Health and Wellness (DHW), Treasury Board, ITSS, and the Medical Society of Prince Edward Island (MSPEI).

3.3 Standards Development and Adoption

The challenges of resource constraints and ongoing financial scrutiny are evident in PEI and in health systems across the country. As such, PEI cannot afford to “reinvent the wheel” or build and maintain individualized solutions for similar facilities or groups across the province. Developing, implementing and supporting provincial policies and standards is a shared responsibility across Health PEI and its stakeholders. Leveraging established, similar and maintainable implementations provides opportunities to improve care consistency, reduce costs and support ongoing sustainability. Each IM/IT initiative must therefore leverage existing investments and employ solutions, policies, standards and practices that are based on provincial criteria and include forward-looking, patient-centric and system-level thinking.

3.4 Sustained Commitment

PEI will continue to experience financial and human resource constraints in the years to come and maintaining our IM/IT progress and momentum will be an ongoing challenge. Our small population combined with the need to have robust IM/IT solutions causes our per capita health care investments to be typically higher than those of larger jurisdictions. As we progress, we must be mindful to not leave clinicians in a prolonged “hybrid state” – a state in which they must simultaneously access paper and electronic records to deliver quality care. We must also recognize and respect the challenges associated with introducing such significant change within a relatively compressed timeframe. Finally, it can be
difficult to achieve, measure and report on health outcome benefits until all of the pieces are in place – thereby making it challenging to demonstrate the value of incremental investments and secure the funding necessary to cover the continuum of care.

To overcome these challenges takes a multi-faceted approach that includes ensuring necessary clinician supports are in place, conducting ongoing benefits measurement and reporting, celebrating successes, leveraging of our implemented solutions to meet new and emerging system needs, capitalizing on funding opportunities from external sources, and inter-jurisdictional sharing and collaboration. Reinvesting the productivity and efficiency gains arising from implemented solutions also helps to offset the province’s investment and maintain momentum.

3.5 Improved Execution

Despite significant progress and relatively consistent delivery performance since 2007, PEI’s e-Health portfolio had numerous challenges in its early days and the journey for clinicians, health system managers and politicians has been difficult. Implementing change is hard and overcoming history is even harder. Ensuring consistent, reliable execution – in which promises relating to scope, timing, cost and quality are met – is key to earning stakeholder trust and building/maintaining momentum.

Health PEI and ITSS will work to attain and maintain a high level of execution proficiency relating to the implementation, monitoring and support of IM/IT investments. The level of cooperation and coordination between these organizations has been increasing over time – as evidenced by the addition of ITSS’s Chief Operating Officer as a voting member of the IM/IT Leadership Committee and the recent Health PEI – ITSS collaborative improvement initiatives.

4 Guiding Principles

The following guiding principles will guide Health PEI’s IM/IT efforts and ensure that future activities are aligned with Health PEI’s established direction and priorities.

4.1 One Island Health System

Embracing the vision of “One Island Health System” and the concept of “One Person, One Record” is a primary guiding principle for future IM/IT investments. IM/IT decisions must be based on patient-centric, system-level analyses and should ensure that delivered solutions align with Health PEI’s Code of Conduct, serve provincial needs and make care delivery as integrated and seamless as possible.

4.2 Health Care Driven, IT Supported

The clinical and business leaders of health care in PEI need to own and manage IM/IT prioritization and decision-making. These priorities and decisions must arise from and support the goals and objectives of Health PEI. The combined Health PEI/ITSS project and operations teams are then responsible to deliver those priorities to the best of their abilities using allocated resources.
4.3 Effective, Accountable Execution

Health PEI and ITSS need to collaboratively ensure that IM/IT investments are delivered and managed effectively and both organizations need to share accountability for service delivery. IM/IT investments must be planned and managed to meet scope, timing, cost and quality commitments.

4.4 Leverage Existing Investments

Future IM/IT initiatives must seek to leverage existing investments to the extent possible and appropriate. Health PEI’s Electronic Health Record (EHR) Interoperability Management Policy, for example, identifies Cerner’s Millennium Suite as the organization’s current foundational Health Information System (HIS) and it therefore serves as the basis of comparison for any new HIS feeder solution. This means that future HIS needs will be met using the foundational HIS whenever it can sufficiently meet the clinical, reporting and financial requirements of the organization. In situations where the foundational HIS cannot support the needs of the organization, alternative solutions may be used provided they have interoperability with the foundational HIS to enable consistent exchange of health information among providers and system users.

4.5 IM/IT Communication & Awareness

Health PEI’s management and clinical leadership will take every opportunity to increase awareness and promote the importance of IM/IT initiatives and their role in health care delivery and transformation. When executed well, IM/IT efforts support improved care delivery, efficiency and costs savings while enabling measurement and reporting of progress against organizational goals and objectives.

4.6 Privacy Protection

Personal health information is the most private form of information due to its highly sensitive nature, and the circumstances of vulnerability and trust under which it is confided or collected. Health PEI’s IM/IT investments and operations must comply with all applicable legislation and regulations relating to protecting privacy and health information. These include the Freedom of Information and Protection of Privacy (FOIPP) Act and the Health Information Act - expected to be proclaimed in 2015. By meeting these privacy obligations we can ensure that effective measures are put in place to prevent intended or unintended negative consequences.

4.7 User and Clinical Adoptability

Health PEI’s Strategic Plan provides that resources and processes will be optimized to sustain a viable health care system by using technology to improve the quality, safety and continuity of care. To be successful, it is critical that clinicians accept and adopt implemented IM/IT solutions. As such, IM/IT solution implementations will not be undertaken unless:

- the end users and/or clinicians impacted are involved in the decision-making process;
- the ability to improve quality, safety and continuity of care can be demonstrated; and
- usability and alignment with work flow is factored into the solution.

---

iii Law Commission of Ontario – Symposium on e-Health Law and Policy
4.8 Innovation Focused

Health PEI will actively seek out IM/IT innovation opportunities that align with the organization’s goals. Innovation may be in the form of supplier partnerships, changes in workflow or processes, enhanced collaboration with other jurisdictions, or the early adoption of new technologies or systems that allow Health PEI to obtain new efficiencies or other significant benefits such as lowered risk, increased quality, safer care and better practice outcomes.

4.9 Prepare for the Pan-Canadian EHR

Health PEI will continue working with other jurisdictions, Canada Health Infoway (CHI), the Canadian Institute for Health Information (CIHI) and other organizations to improve the level of interoperability between PEI’s EHR and the pan-Canadian EHR. This will support the secure sharing of health information and improved delivery of care across the country. Health PEI will promote adoption and expanded use of Canadian standards and best practices for communication between information systems.

5 Strategic Direction

5.1 EHR Evolution

Health PEI’s most significant IM/IT investments relate to evolving the provincial EHR (Appendix B includes PEI’s current-state EHR architecture and system descriptions). While there are many aspects to this evolution, they can be typically classified as closing existing EHR gaps and expanding the EHR footprint.

5.1.1 Closing Existing EHR Gaps

While PEI’s EHR covers a significant portion of the circle of care, there are coverage gaps in the current EHR footprint that need to be closed to ensure seamless, quality care. For example, Health PEI does not currently have a documentation solution implemented within its Intensive Care Units. An inpatient transferred to the ICU and then returned to his or her unit will go from having electronic documentation to paper and then back to electronic. This causes frustration for care providers and makes it difficult to coordinate and provide safe care. Similar EHR coverage gaps exist for Maternal & Newborn Health as well as several other service areas within acute care.

Another set of EHR gaps relate to system integration. The EHR is intended to bring together health information from numerous information systems to provide one coherent record for Islanders and their care providers. PEI’s EHR has several systems, however, that are not integrated and do not share the information needed throughout the circle of care. For example, information from the DIS does not pass through to the CIS and clinicians in the acute care setting must log into a separate application to see community medication profiles. Having separate logins reduces the likelihood that this information
will be brought into care delivery decisions. Even if a clinician were to review the DIS medication profile, it would not be actionable in CIS and any continuing medications would have to be re-ordered in CIS. This slows down care delivery and raises the probability of medical errors.

The closing of existing EHR gaps also includes the organic evolution of the solutions in place. The teams supporting these solutions regularly carry out pieces of work to incrementally improve functionality and robustness. The increments can be as small as adjusting an electronic form or as large as a CIS code upgrade. Each improvement, however, helps to incrementally improve usability, adoption, care delivery and ultimately health outcomes.

5.1.2 Expanding the EHR Footprint

While PEI’s EHR covers a significant portion of the circle of care, there are major service delivery areas that do not have appropriate electronic solutions in place. It is important to close the EHR gaps identified above but IM/IT investments must also seek to expand EHR coverage for these service areas.

The next and highest priority within PEI’s EHR portfolio is to select, procure and implement a provincial Electronic Medical Record (EMR) solution. Health PEI has already begun working with its collaboration partners (DHW, ITSS and MSPEI) to determine the scope, timelines and costs of such an undertaking – focused initially on meeting the needs within community practice and walk-in clinic settings. This EMR project would also include integration efforts that will enable improved sharing of relevant health information throughout the circle of care. It is expected that a provincial EMR solution will provide significant support for the province’s community-based Mental Health and Addictions services as well as other program areas.

PEI’s EMR solution will be the key foundational element necessary for the implementation of a Personal Health Record (PHR) – a secure portal through which an individual can personally view and interact with his or her electronic health record. For the subset of Islanders who choose to enrol and begin using a PHR, they will be able to securely access and augment their health information in order to promote and facilitate self management of their care. A PHR solution has the potential to expand the use of remote patient monitoring on PEI as more and more connectable devices (e.g. glucometers, blood pressure cuffs, pedometers, etc.) become available for use in the home.

As the footprint of PEI’s EMR solution grows, decisions will need to be made regarding an electronic solution for the Island’s Ambulatory Care settings. In some jurisdictions these needs are serviced with one or more EMR solutions while in others hospital-based CIS systems are extended to cover ambulatory care. An evaluation of business requirements versus the functionality of each system will be required to make an appropriate determination. In the meantime, a pre-requisite work effort is being carried out – led by the province’s Ambulatory Care Steering Committee – to standardize tools and processes across the province. This allows for more consistent care delivery and also makes the build and implementation of an electronic solution easier and faster when the time comes.
While view access to CIS has been recently added for nursing staff in government-owned manors, there is an ongoing need for a provincial electronic care solution within PEI’s Long-Term Care sector. This area poses a particular challenge due to the mix of public and private manors. Appropriate safeguards (policies, procedures, auditing, etc.) will need to be in place to accommodate the provision of extensive EHR access to private sector staff. As with EMR, the utility of the solution deployed within Long-Term Care will benefit from extensive integration with other EHR systems.

Another service delivery area requiring future IM/IT investment is Home Care. While ISM is currently being used as a case management tool for Home Care clients, it is not adequately meeting the current or future needs of the business. Health PEI’s intention is to select, procure, integrate and deploy an electronic solution that better meets the functional requirements of Home Care workers and is fully integrated with PEI’s EHR.

Looking further out, future IM/IT investments are expected relating to Ambulance Services. Health PEI will work with Island EMS as they progress towards deploying an Electronic Patient Care Report (EPCR) solution in support of pre-hospital care delivery. Integrating an EPCR solution with PEI’s EHR will better coordinate and improve the care delivered by both organizations.

5.2 Supporting Technology

In addition to major IM/IT investments required to bridge existing gaps and expand the EHR footprint, investments in supporting technologies will be important to ensure usability and maximize the adoption of implemented solutions. These technologies cover a range of areas but include:

- **Voice Recognition** – This includes the use of front-end (e.g. Dragon, TALK) and back-end (Dictaphone/transcription/e-Scription) dictation solutions. While these solutions are already in use by Island clinicians, they will need evolving functionality and expanded usage in the coming years to improve the speed and quality of clinical documentation.

- **Mobility** – Smart phones and tablets are already permeating care delivery settings as clinicians increasingly expect both personal and issued devices to be supported within their workflows. This trend will accelerate in the coming years and appropriate controls and supports must be put in place to manage access and usage. Similarly, increasingly-connected clinicians expect to be able to remotely/virtually access clinical systems so appropriate solutions (e.g. VPN, websites, mobile apps) must be in place and effectively managed.

- **Telehealth** – Health PEI already has some capacity to carry out virtual sessions over distance for consultation, education and care delivery purposes. In the coming years, IM/IT investments will evolve the functionality of these solutions and expand their use.

- **Remote Patient Monitoring (RPM)** – RPM technologies (e.g. wirelessly-monitored pacemakers, automatic defibrillators, etc.) enable remote surveillance of an individual’s vital functions. Future IM/IT investments will expand Health PEI’s use of RPM to improve population health and proactively manage care delivery.
• **Medical Devices** – Over time and as resources/funding permit, an increasing number of connected medical devices will be used to automatically contribute to the EHR. These devices (e.g. digital glucometers, blood pressure cuffs, etc.) minimize errors resulting from transcribing results and help clinicians manage key care and disease-related data.

• **Cloud computing/Infrastructure Investments** – The proliferation of cloud-based computing will impact the architecture, operations and operating costs relating to PEI’s EHR infrastructure. These investments, combined with those for more traditional infrastructure elements (e.g. data centres, facility Wi-Fi and communication networks, etc.) will be required to ensure a stable base that can be leveraged by advanced end-user solutions (e.g. PowerChart Touch, connected medical devices, etc.).

The IM/IT solutions available to support health care are expanding at an increasing rate and offer near-limitless possibilities for the future of care delivery. That said, adoption of new technology is often challenging to manage due to the growing number of options available, the incredible pace of evolution, the effort involved in deploying and supporting the adopted solutions, and the need to “get it right” in an environment where mistakes can lead to loss of life. Health PEI will endeavour to plan intelligently with as much foresight, due diligence and leveraging as possible to reap the tremendous potential that these new technologies offer.

### 5.3 IM/IT Governance, Privacy and Information Access

As noted previously, Health PEI has made significant progress in recent years with regards to managing its IM/IT portfolio. The IM/IT Leadership Committee is providing valuable direction, prioritization and oversight for the organization on an ongoing basis. During the period of this Strategic IM/IT Plan, the committee will focus on a number of objectives, including:

- working with the leadership of ITSS to undertake a series of collaborative initiatives aimed at improving various aspects of IT service delivery;
- aligning prioritization criteria and processes with Health PEI’s Strategic Plan and the criteria/processes in use by the organization (e.g. PBMA) and other governance bodies (e.g. CIS Operations Management Committee);
- reviewing best practice IM/IT governance models used in other jurisdictions (e.g. COBIT) and leveraging as appropriate;
- identifying and overseeing the preparation and submission of Health PEI’s IM/IT-related capital investment proposals.

From a privacy and information access perspective, Health PEI will be focused on ensuring that our IM/IT investments and operations comply with all applicable legislation and regulations relating to protecting privacy and health information (e.g. FOIPP and PEI’s forthcoming Health Information Act). This will be carried out via 1) **Privacy Impact Assessments (PIA)** for significant investments or major system changes
and 2) regular system audits in which audit results are disseminated to appropriate organizational leaders for review and action as necessary. The organization will also be focused on supporting DHW in writing the regulations and policies necessary to support the pending Health Information Act.

5.4 Evolution of Business Intelligence

Ensuring quality, accessible and efficient health care for PEI is dependent on making informed decisions at every level. It is therefore critical to turn available health data into insightful and actionable information. Health PEI’s Business Intelligence (BI) capabilities are evolving from their historical state – primarily using descriptive and diagnostic analytics – towards a more advanced state with an increasing usage of predictive and prescriptive analytics.

As additional service delivery areas begin using integrated EHR solutions, more complete and comprehensive data becomes available. This, combined with organizational learning and the use of more advanced statistical tools, allows Health PEI to:

- better understand significant health care variables;
- improve the quality, access and efficiency of health care services; and
- improve planning for future resource allocation and care delivery.

The evolution of Health PEI’s BI capabilities will include several focus areas over the next three years:

- expansion of data warehouse holdings from various EHR information systems;
- continued development of performance measurement frameworks and dashboards for the organization as a whole and for divisions/program areas;
- development of analytics staff and use of more advanced statistical tools; and
- expanded “self-serve” reporting for Health PEI management and clinical leaders.
Ongoing IM/IT Management

Implementing IM/IT initiatives is a key component of Health PEI’s ongoing transformation of care delivery in the province. As these efforts are complex and inter-related, they take time and careful planning to deliver successfully. At any given time, Health PEI typically has dozens of IM/IT requests and identified system needs to prioritize, plan and deliver. These include a mix of operational projects (e.g. a software upgrade for a particular information system), infrastructure activities (e.g. network improvements carried out in coordination with ITSS), new business initiatives and reporting/research projects.

Health PEI relies on its IM/IT Leadership Committee (described in Section 2) to provide ongoing prioritization and oversight of the organization’s IM/IT portfolio. This group works with Health PEI’s CIO to maintain a current roadmap of underway, near-term and longer-term IM/IT priorities.

As new potential investments are brought forward by one or more sponsors within Health PEI, they are evaluated using standardized criteria that take into account factors including benefits, risks, funding, and alignment with Health PEI’s strategic direction. This evaluation helps to determine the relative prioritization of investment opportunities. The sponsor of each initiative is then responsible to bring high-priority initiatives forward for consideration, funding and approval to the appropriate oversight body – typically a combination of Health PEI’s Executive Leadership Team, the DHW and the Provincial Treasury Board. Once an initiative is approved to proceed, the sponsoring division will work in collaboration with Health PEI’s Health Information Management division and ITSS to schedule, plan and deliver the project.

For further and updated information regarding Health PEI’s IM/IT portfolio, please visit:

www.healthpei.ca/ehr

To inquire about a particular IM/IT initiative or anything within the scope of this document, please contact:

Chief Information Officer
Health PEI
PO Box 2000
16 Garfield Street
Charlottetown, PE
C1A 7N8
HIM@gov.pe.ca
Strategic Plan 2013-2016

OUR DIRECTION FOR 2013-2016

QUALITY

We will provide safe, quality, and person-centered care and services by:

- Ensuring appropriate patient safety standards are met
- Embedding the philosophy of person-centered care
- Promoting improved health outcomes through prevention and education
- Fostering a healthy work environment

ACCESS

We will provide access to appropriate care by the right provider in the right setting by:

- Reducing wait times in priority areas
  - Primary Health Care Providers
  - Mental Health Services
  - Addiction Services
  - Long-Term Care
  - Elective Surgical Services
  - Emergency Services
- Improving access to care for vulnerable populations, including:
  - Children with special needs
  - Frail elderly and seniors with complex health needs

EFFICIENCY

We will optimize resources and processes to sustain a viable health care system by:

- Utilizing technology to improve the quality, safety, and continuity of care
- Improving management of bed utilization across the system
- Improving the coordination of care across the continuum of health services
- Effective resource management

For a full copy of the plan please visit our Publications page: www.healthpei.ca
Appendix B. EHR Current-State

Appendix B.1 EHR Current-State Architecture

The EHR Architecture shown below represents the major technical and architectural components of PEI’s current EHR infrastructure.
Appendix B.2  System Descriptions

Cerner's Millennium Suite (CIS) is the foundational Health Information System for Health PEI. As the cornerstone of PEI’s EHR, the CIS provides seamless, real-time exchange of clinical information between all Island hospitals and numerous other facilities. The following CIS modules are currently installed:

1. Core Services
2. ProFile (Health Records)
3. MRP/Clinical Reporting
4. ERM – Registration
5. ESM – Scheduling
6. Inbox/Message Centre
7. Remote Report Distribution
8. Charge Services
9. PathNet – General Laboratory - Chemistry
10. PathNet – Blood Bank
11. PathNet – Anatomic Pathology
12. PathNet – Microbiology
13. Synoptic Reporting – Anatomic Pathology
14. Medical Device Interfaces – Lab Instrumentation
15. PharmNet – Pharmacy
16. Clinical Supply Chain (Pharmacy)
17. CareNet – Nursing Forms & Progress Notes for Nurses, Physicians and Allied Health Professionals.
18. FirstNet – Emergency Department Triage & Tracking Solution and Nursing and Physician Forms
19. PowerNote ED – Emergency Dept Physician Documentation
20. Prescription Writer – Emergency Dept, electronic prescriptions
21. SurgiNet – Surgery Department Scheduling, Inventory/Preference Cards, PACU (Post Anesthesia Care Unit) and Inter-operative Forms.
22. Computerized Provider Order Entry (CPOE)
23. Interfaces
Along with the CIS, Health PEI’s primary operational IT systems are as follows:

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AegisPOC System</strong></td>
<td>Data management system for point of care glucometers, used for bedside glucose readings.</td>
</tr>
<tr>
<td><strong>ARGUS</strong></td>
<td>Application to set up, run and record quality assurance tests on cancer treatment equipment.</td>
</tr>
<tr>
<td><strong>ARIA/Eclipse/IMsure</strong></td>
<td>Used for scheduling medical and radiation oncology, provides an electronic medical record, drives the medical equipment and calculates radiation dosing (Linear Accelerator - Radiation Treatment equipment), tracks treatments, clients and provides statistics and images.</td>
</tr>
<tr>
<td><strong>Oncology Information/Eclipse Treatment Planning System</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cactus</strong></td>
<td>Used in to update health records with national coding standards for data abstracting and CIHI submission.</td>
</tr>
<tr>
<td><strong>CIS</strong> Clinical Information System</td>
<td>Cerner’s Millennium Suite (CIS) serves as Health PEI’s foundational Health Information System.</td>
</tr>
<tr>
<td><strong>CR</strong> Client Registry</td>
<td>Client Registry is a database of demographic and Medicare eligibility information. It is viewed/updated by several satellites systems, including CIS, ICS/DIS, ISM, VSS (Vital Statistics System), CT (Cancer Treatment) and PSMS.</td>
</tr>
<tr>
<td><strong>Cancer Screening</strong></td>
<td>Database used to support colorectal cancer screening (results and reminders)</td>
</tr>
<tr>
<td><strong>Dictaphone</strong></td>
<td>Dictaphone is a speech-only dictation and transcription system used by many different departments and clinics throughout the acute care environment. Dictaphone is provided by Nuance, the makers of the Dragon voice recognition system.</td>
</tr>
<tr>
<td><strong>DIS</strong> Drug Information System</td>
<td>Database for all PEI resident medication profiles filled at community (retail) pharmacies and the Provincial Pharmacy.</td>
</tr>
<tr>
<td><strong>Grasp</strong></td>
<td>A clinical workload measurement tool used primarily by nursing and allied health staff.</td>
</tr>
<tr>
<td><strong>HFS - Health Financial System</strong></td>
<td>Oracle Financials system for Health PEI</td>
</tr>
<tr>
<td><strong>Home Oxygen Database</strong></td>
<td>Home Oxygen program</td>
</tr>
<tr>
<td><strong>iCore</strong></td>
<td>Physician Billing Software – submits claims to ICS</td>
</tr>
<tr>
<td>System</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ICS</td>
<td>Supports workflow for Medicare, Dental and Provincial Pharmacy (physician billing, dental claims and provincial drug program administration). Interfaces with CR and iCore (physician billing) primarily, but also share information with other health systems such as ISM, RIS and Health Finance.</td>
</tr>
<tr>
<td>ISM</td>
<td>A Case Management and Financial Benefit Adjudication application used by ≈ 1,500 users within non-acute care service delivery programs across DHW, Health PEI and the Dept. of Community Services and Seniors. ISM currently supports the following program areas: Addiction Services, Audiology, Community Mental Health, Community Nutrition, Diabetes, Disability Support, Home Care, Hospice Care, Infection Prevention and Control, Long Term Care, Public Health Nursing, Reproductive Care Program, and Speech Language Pathology.</td>
</tr>
<tr>
<td>Oncolog</td>
<td>Oncolog is used to enter Cancer Registry data (demographics, diagnostics and use ICD 9 codes, staging, collaborative data, contacts and status including Date of Death info., treatment data, follow up patient data, survival data, etc.) for patients at PEI CTC, query patient information, mail merge documents and running reports in the application.</td>
</tr>
<tr>
<td>PARIS</td>
<td>System Patient Registry for the wait list for family physicians.</td>
</tr>
<tr>
<td>PACS</td>
<td>An information system that addresses the imaging side of the Diagnostic Imaging (DI) Department by enabling the digital capture, storage and distribution of DI images across PEI. It is tightly integrated with the Radiology Information System (RIS).</td>
</tr>
<tr>
<td>PSMS</td>
<td>Incident Management/Reporting system used across Health PEI</td>
</tr>
<tr>
<td>RIS</td>
<td>The Radiology Information System (RIS) is a system used in many physician offices and hospital units to track Diagnostic Imaging service delivery. Core functionality includes patient scheduling and tracking, billing and transcription and reporting.</td>
</tr>
<tr>
<td>Raisers Edge</td>
<td>Hospital Foundations registry</td>
</tr>
<tr>
<td>TALK</td>
<td>Voice recognition software that aids in the speedy turnaround of diagnostic imaging reports and inclusion in the Radiology Information System (RIS) through an interface. TALK reportedly uses licensed components of the Nuance Dragon engine.</td>
</tr>
<tr>
<td>TMV</td>
<td>Provincial ECG Information System. ECG information is stored on TMV server for viewing via workstations and tablets.</td>
</tr>
</tbody>
</table>