

British Columbia's 2010/11 – 2012/13 Provincial

Health Sector Information Management/ Information Technology Strategy

Developed for the BC eHealth Strategy Council

Version 2.0

Updated:
January 2011



Table of Contents

- Executive Summary..... 3
- eHealth Strategy Council Endorsement 4
- Introduction 5
- Introduction 5
- Document Purpose..... 5
- Context 5
- BC’s Health System 6
- Health System Challenges and Priorities 6
- Transforming the Health System 7
- Health System IM/IT..... 8
- Health IM/IT Governance..... 10
- IM/IT Value Proposition 11
- Mission 13
- Vision..... 13
- Guiding Principles/Values 13
- 2010 Health Sector IM/IT Strategy Overview 14
- Focused Investments 15
- Health Web 2.0 Strategy 15
- Electronic Medical Records..... 18
- Provincial Telehealth..... 20
- Clinical Information Systems..... 21
- Provincial Electronic Health Records 22
- Additional Strategies..... 25
- Health System Performance Monitoring and Reporting 25
- Standards..... 28
- Community Care Systems 29
- First Nations eHealth..... 29
- Ambulance Service Systems..... 30
- Consolidation and Infrastructure 31

EXECUTIVE SUMMARY

The Ministry of Health 2010/11 - 2012/13 Service Plan was published in March 2010. The plan outlines the strategic priorities and goals for British Columbia's health care system over the three year period. The primary focus of the plan is the continued transformation of the health care system to meet the current and future needs of the citizens of BC, as represented in the four primary goals of the Service Plan:

1. Improved health and wellness for British Columbians.
2. British Columbians have the majority of their health needs met by high quality community based health care and support services.
3. British Columbians have access to high quality acute care services when they need them.
4. Improved innovation, productivity and efficiency in the delivery of health services.

Version 2.0 of the Health Sector IM/IT Strategy for 2010/11 – 2012/13 (the “Strategy”) is an update to the Strategy document first published in 2009. The updated document describes how IM/IT organizations across the sector will support and enable the achievement of health system priorities and goals through the effective management of information and related information technologies.

The following provincial IM/IT investments represent the principal focus of health IM/IT resources through 2012/13 in support of health system priorities:

1. A focus on prevention and personal responsibility for health
 - Health Web 2.0 Strategy
2. Introducing a province-wide system of integrated primary and community care
 - Electronic Medical Records
 - Telehealth Solutions
3. Providing high quality and accessible acute care
 - Clinical Information Systems
4. Driving cost effective and efficient provision of health care services
 - Provincial Electronic Health Record

These five investments are the main focus of the Strategy document but the need for IM/IT support across all aspects of the health system is also acknowledged within the Strategy. The other significant IM/IT efforts that will be undertaken across the health system through 2012/13 are outlined as additional strategies.

eHEALTH STRATEGY COUNCIL ENDORSEMENT

The updated Strategy has been endorsed by the eHealth Strategy Council. Council membership includes:

Michael MacDougall	Chief Operating Officer, Ministry of Health (Chair)
Dr. David Ostrow	President and Chief Executive Officer, Vancouver Coastal Health Authority
Michael Marchbank	Executive Vice President, Provincial Health Services Authority
Cathy Ulrich	Chief Executive Officer, Northern Health Authority
Howard Waldner	Chief Executive Officer, Vancouver Island Health Authority
Philip Barker	Vice President, Information Management, Fraser Health Authority
Barry Rivelis	Chief Information Officer, Provincial Health Services Authority, Vancouver Coastal Health and Providence Health Care
Malcolm Griffin	Chief Information Officer, Interior Health Authority
Catherine Claiter-Larsen	Vice President and Chief Information Officer, Vancouver Island Health Authority
Michael Epp	Chief Operating Officer, College of Physicians and Surgeons of BC
Joe Gallagher	Chief Executive Officer, First Nations Health Council
Marshall Moleschi	Registrar, College of Pharmacists of BC
Dave Nikolejsin	Chief Information Officer, Ministry of Citizen's Services
Dr. Mark Schonfeld	Chief Executive Officer, BC Medical Association
Stephen Brown	Chief Administrative Officer, Ministry of Health
John Bethel	Assistant Deputy Minister Transformation and Productivity Division, Ministry of Health
Andrew Hazlewood	Assistant Deputy Minister, Population and Public Health Division, Ministry of Health
Elaine McKnight	Assistant Deputy Minister, Health Sector IM/IT Division, Ministry of Health
Heather Davidson	Assistant Deputy Minister, Health Authorities Division, Ministry of Health
Bob Nakagawa	Assistant Deputy Minister, Pharmaceutical Services, Ministry of Health
Bob Bell	Chief Operating Officer, HealthLinkBC, Ministry of Health

INTRODUCTION

DOCUMENT PURPOSE

The purpose of the Health Sector Information Management/Information Technology Strategy (the 'Strategy') is to outline the strategic direction for IM/IT investment across BC's health system, focusing on the three year period 2010/11 through 2012/13. More specifically, the document identifies the IM/IT strategies that will be pursued in support of BC health system priorities, as identified in the Ministry of Health Service Plan¹.

The scope of the document includes IM/IT strategies being undertaken by the Ministry of Health, BC's health authorities and BC First Nations, as well as those undertaken by private practices in coordination with the Ministry and health authorities.

This document is an update to, and supersedes, the Health Sector IM/IT Strategy first published in October, 2009. The Strategy will be reviewed in fiscal year 2011/12 and an update published if required to reflect significant changes in direction.

CONTEXT

This Strategy represents a significant update to the 2009 Health Sector IM/IT Strategy. The development of the 2009 document, the first such strategy produced in BC, was initiated by the eHealth Strategy Council in 2008 in recognition of the need for increased IM/IT coordination across health sector organizations and to ensure IM/IT alignment with overall health system strategies and priorities. While those drivers remain valid in 2010, sufficient changes have occurred across the health system to warrant a major update to the Strategy. The primary factors influencing the update include:

- The release of the Health Sector Service Plan in March 2010, reflecting the continued evolution of health system priorities;
- The considerable impact on IM/IT of the consolidation of corporate, support service and back office functions in the lower mainland health authorities of Fraser Health Authority (FHA), Vancouver Coastal Health Authority (VCHA) and the Provincial Health Services Authority (PHSA);
- Recognition of the current economic climate and an increased emphasis on system efficiencies and sustainable solutions; and
- The continuous improvement and evolution of the Strategy document as a strategic tool. That evolution is most evident in the 2010 update through the strong alignment of IM/IT strategies to health system priorities.

The 2010 Health Sector IM/IT Strategy has been developed for the eHealth Strategy Council and will continue to serve as an overarching guide for BC health sector IM/IT organizations, as well as a communications tool for other interested stakeholders.

¹ Ministry of Health 2010/11 - 2012/13 Service Plan

BC'S HEALTH SYSTEM

BC's world class health system is a complex environment involving numerous public and private sector entities working together to deliver effective public health and health care services to British Columbians.

The Ministry of Health guides BC's health system. The Ministry works with other ministries, the health authorities, care providers, agencies and other groups to improve the health of BC residents and provide access to care. The Ministry provides leadership, direction and support to their service delivery partners and set province-wide goals, standards and expectations for health service delivery by health authorities.

The Province's six health authorities are the organizations primarily responsible for health service delivery. Five regional health authorities deliver a full continuum of health services to meet the needs of the population within their respective geographic regions. The PHSA is responsible for managing the quality, coordination and accessibility of selected province wide health programs and services.

HEALTH SYSTEM CHALLENGES AND PRIORITIES

The overarching challenge facing BC's health system is to deliver a high performing sustainable health system (prevention to end-of-life care) in the context of significant growth in demand.

The health system continues to experience an increasing demand for health services and, while currently delivering some of the best results in the country, the current system is not on a sustainable course to manage that demand. The most significant drivers of rising demand are the aging population, the increasing need to provide care to the frail elderly, a rising burden of illness from chronic diseases, mental illness and cancer, and advances in technology and pharmaceuticals driving new costly procedures and treatments.

The pressure on the system is compounded by worldwide competition for health professionals and health care workers, and the need to maintain and improve the health system's physical infrastructure (i.e. buildings and equipment). In the current economic climate it is even more important for the health system to find new and creative ways to make sure the resources available for health care services are used effectively and in ways that most benefit the people of BC.

BC also faces a challenge in ensuring that all parts of society and all populations can access health services and enjoy good health. While the health status of Aboriginal people has improved significantly in several respects over the past few decades, the Aboriginal population in BC continues to experience poorer health and a disproportionate rate of chronic diseases and injuries compared to other BC residents. Government is working with First Nations, Métis and other partners to improve Aboriginal people's health and to close this gap in health status.

The Ministry of Health Service Plan outlines the health system's strategic priorities over a three year period to meet these challenges and increasing demands. Table 1 outlines the Service Plan goals.

Table 1: Ministry of Health 2010/11 - 2012/13 Service Plan Goals


Goals
› Improved health and wellness for British Columbians.
› British Columbians have the majority of their health needs met by high quality community based health care and support services.
› British Columbians have access to high quality acute care services when they need them.
› Improved innovation, productivity and efficiency in the delivery of health services.

TRANSFORMING THE HEALTH SYSTEM

The term “transformation” is often used in the context of business change. Stated simply, transformation is moving from one state to another. The Ministry of Health’s priorities and related goals represent an innovation and change agenda that will transform BC’s health system from its current state to a future state. Examples of the defining characteristics of those two states are provided in Table 2.

Table 2: Health System Characteristics

Current State	Future State
Provider centred	Citizen centred
Disease/condition focused	Prevention and health focused
Acute Care (hospital) focused	Primary and Community focused
Disconnected (silo’d) care services	Integrated healthcare experience
Paper-based	Electronically enabled
Non-standardized treatment	Clinical guideline based care
Inefficient processes	LEAN processes
Non-evidence based decision making	Evidence based decision making
Cost driven	Outcome driven
Block funding	Patient-focused funding
Unsustainable	Sustainable



HEALTH SYSTEM IM/IT

BC's health system is not supported by a single comprehensive IM/IT organization. Instead, each organization within the health system is responsible for its own IM/IT support. This distinction is significant from a governance perspective in that IM/IT resources are responsible, first and foremost, for supporting the priorities of the organizations to which they belong.

While each health sector organization is working towards the same overall health system goals, their individual organizational priorities may differ significantly at any point in time due to factors such as differences in geographic area being served, patient and health care provider populations, and existing facilities and services. Accordingly, each organization's IM/IT requirements may be unique in many respects at a particular period in time. The Health Sector IM/IT Strategy focuses on those strategies that are common across all health sector organizations in support of the broader health system goals.

The major IM/IT resources supporting BC's health system are outlined below.

The Ministry of Health

The Assistant Deputy Minister of the Ministry of Health's Health Sector IM/IT Division (HSIMT) provides leadership and direction for IM/IT within the health system and works collaboratively with the health authority Chief Information Officers and their departments to provide solutions to support health system priorities.

The Health Sector IM/IT Division supports all areas of the Ministry of Health, and may also lead in the development of provincial systems or the provision of services where it is deemed appropriate from a health system perspective. Also within the Ministry, HealthLinkBC provides IM/IT services in support of that organization's role as a gateway to access non-emergency health information and services in the Province.

BC Health Authorities

PHSA and VCHA share a Chief Information Officer and IM/IT department. The Interior Health Authority (IHA), Northern Health Authority (NHA), Vancouver Island Health Authority (VIHA) and FHA each have their own CIOs and IM/IT departments. Each department is responsible to their executive committees, and ultimately to their Board of Directors, for providing services in support of their organization's role in the direct provision of healthcare services.

Health Shared Services BC

The Health Shared Services BC (HSSBC) was launched in February 2009 and represents a commitment to more effectively and efficiently integrate the delivery of common non-clinical services, including IM/IT services. The Chief Technology Officer reports through HSSBC executive to the Management Board for HSSBC. Organizationally, HSSBC falls under PHSA. Further detail regarding major HSSBC activities is provided under the 'Additional Strategies' section.

Private Partners

BC's health services are provided through a combination of public and private organizations. Private partners within the system, such as physician private practices and private laboratories, also have IM/IT requirements. In general, private partners are responsible for their own IM/IT services but there are exceptions. In order to achieve specific health system goals, the government may enter into agreements with private partners to assist in the provision of specific IM/IT services. For example, via BC's Physician Master Agreement, the Province is currently subsidizing the implementation of electronic medical records in physician offices. As well, where there is a desire for private partner systems to interface with government systems, standards will typically be established to ensure the privacy, security and data quality of information to be exchanged.

Beyond the provision of IM/IT services to private partner health service providers, the private sector plays a significant role in the provision of IM/IT services for government. The Ministry and the health authorities have, through competitive procurement processes, established long-term contracts with service providers in a number of instances where the provision of IM/IT services by a private sector partner is a more appropriate solution than the direct provision of services by the government. For example, the Ministry and the health authorities contract with private sector partners for the provision of network services.

Government Partners Outside of the Health System

The Chief Information Officer for the Province of British Columbia provides executive leadership for the Office of the Chief Information Officer (OCIO). The OCIO collaborates with ministries, broader public sector organizations, communities and private sector suppliers on cross-government initiatives to transform the way government delivers services to its citizens. They propose, develop, maintain and evaluate compliance for corporate wide IM/IT policy, procedures and standards.

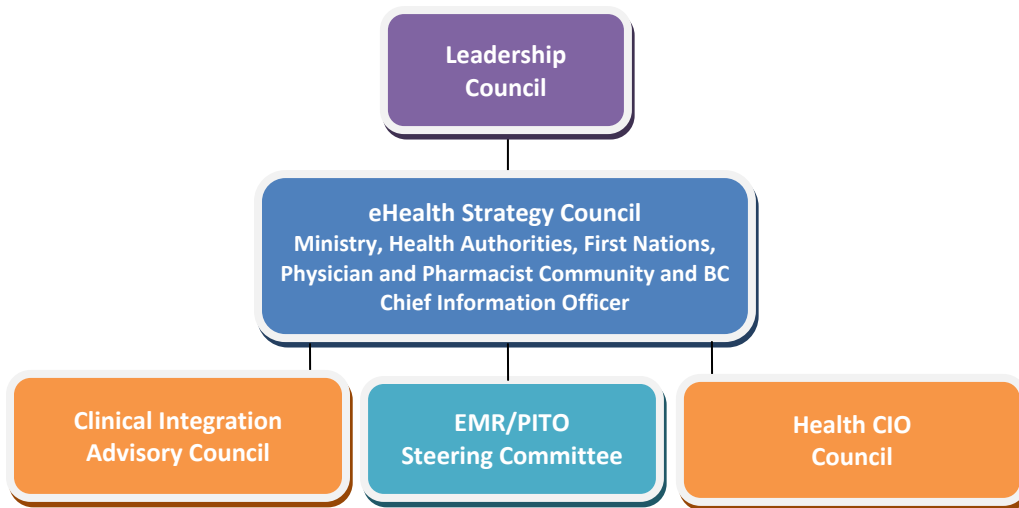
Within the Ministry of Citizens' Services, Shared Services BC (SSBC) provides information technology infrastructure support services for the BC government and the broader public sector. These include: data centre services, desktop support and service desks, voice and data networks, electronic messaging and directories, applications and service integration, and security/virus protection.

Many of government's mission-critical programs and services, such as court operations, fire protection, emergency dispatch and PharmaNet, require support from one or more SSBC services. SSBC also plays a key role in the planning, implementation and support of e-government initiatives that deliver improved service to the citizens of BC.

SSBC's Information Technology Branch aggregates government's demand for information technology services, delivers those services, and manages contracts to deliver services. SSBC has been working to support new priorities, be customer-focused, and develop new tools to maintain the integrity and stability of government's IT infrastructure. These changes support overall improvement of SSBC as a shared services provider to government.

HEALTH IM/IT GOVERNANCE

A simplified representation of the IM/IT governance within the BC health system is represented below.



Leadership Council

Chaired by the Deputy Minister of Health and comprising health authority Chief Executive Officers and senior ministry officials membership, this group has ultimate responsibility. The Council develops common strategies, philosophies and principles on a wide range of major provincial issues relating to the strategic direction, management and accountability of the provincial health care system.

eHealth Strategy Council

While primarily focused on eHealth, this group, chaired by the ministry's Chief Operations Officer, is responsible for the development of IM/IT strategies to address all aspects of the health system, both for clinical and non-clinical support. The Council reports to the Leadership Council and includes both senior ministry and health authority members, physician and pharmacy community groups and First Nations representation.

Clinical Integration Advisory Council

The Clinical Integration Advisory Council (CIAC) represents intended system users and advises the eHealth Strategy Council on clinical requirements, processes and considerations for designing, developing, implementing, adopting and evaluating eHealth initiatives.

Health CIO Council

Chaired by the Assistant Deputy Minister of the ministry's Health Sector IM/IT Division, the Health Chief Information Officers (CIO) Council includes the six BC health authorities' CIOs, the Vice President, Information Management, of the BC Ambulance Service, and the Chief Technology Officer of Health Shared Services BC. The Council provides input and advice on IM/IT systems and services

design, development and implementation, including messaging standards, architecture, security, managed operations, networking and related IT capabilities to support the health system.

Electronic Medical Record/Physician Information Technology Office Steering Committee

The EMR/PITO Steering Committee reports to the eHealth Strategy Council and provides guidance on the implementation of electronic medical record systems, and related services, in physician offices.

Capital Project Boards

Capital Project Boards are established for all major capital projects undertaken by the Ministry and health authorities. The boards are not unique to IM/IT projects and are intended to ensure an appropriate level of oversight and accountability at the executive management level for major capital investments.

IM/IT VALUE PROPOSITION

Effective healthcare is dependent on information. From the accurate diagnosis of an individual patient to the establishment of system level priorities and the conducting of research, BC's healthcare system requires high quality, timely information. The effective management of that information is what IM/IT is all about. It is essential to providing effective care and for ensuring an appropriate balance between making essential information available to those who need it and safeguarding privacy and security.

The government's Core Policy and Procedures Manual defines information management as:

"The application of systematic planning, controls and standards to the creation, use, transmission, retrieval, retention, conversion, final disposition, and preservation of information resources in all formats, and the improvement of information handling systems of all kinds".

It defines information technology as:

"The common term for the entire spectrum of technologies for information processing, including software, hardware, communications technologies and related services".

Stated most simply, from a provincial health system perspective, information management is about the appropriate collection, storage and sharing of clinical and non-clinical information while information technology relates to the supporting systems and services.

Common Systems and Services

In today's world, IM/IT plays an important role within most large organizations in ways that are not unique to the health system. Examples of such common, sector independent IM/IT systems and services are:

- Desktop computing and related applications,
- Electronic file storage,
- Email/communications networks,
- Internet/web services,
- Videoconferencing services,
- Financial systems, including accounting and payroll, and
- Procurement/supply systems.

These common IM/IT systems and services add tremendous value but are an expected part of any large business. They are not typically unique to healthcare and are not a main focus of this Strategy. Initiatives related to common IM/IT systems and services are identified only where they represent significant sector-wide effort or where they comprise a key element of an IM/IT solution unique to health services.

Healthcare Solutions

Beyond the spectrum of common value-added systems and services, IM/IT makes a range of high value contributions that are unique to the direct provision of quality healthcare services. A few representative examples are:

- **Data analysis & decision support (population, practice, etc.)** – Priority setting for the provision of services and for system investments is essential for establishing an affordable, sustainable health system that addresses the needs of the population. Quality data on population health trends, service availability and usage, and system expenditures allows health system decision makers to set an appropriate direction for the health care system. On a smaller scale, at the practice, community or regional level, similar data is needed to support effective decision making.
- **Clinical decision support** – Regardless of the care setting, be it an ambulance, a family physician's office, an emergency department or a hospital ward, the care provider requires timely access to complete and up to date patient health information to provide appropriate and effective care.
- **Medical testing** – Medical diagnosis and ongoing treatments can be highly dependent on medical tests, such as laboratory tests, X-rays and MRIs. Electronic storage and access to test results can contribute to fewer tests, lower costs and quicker access to information.
- **Access to services/scheduling** – IM/IT solutions have the potential to increase remote access to medical services through technologies such as telehealth solutions as well as increasing access through efficient scheduling solutions and the provision of procedure waitlist information for available locations.
- **Information and education services** – Consumers are increasingly looking to the internet and other technology solutions to access information, including healthcare information. IM/IT can be used to provide access to educational material contributing to health promotion and illness prevention as well as information about where and how to access services. Beyond this, IM/IT solutions may provide the patient access to their own health information to increase the ability to participate as a partner in their care team.

MISSION

A mission statement is typically an enduring and overarching statement of purpose; an organization's reason for existence. In the context of the Health Sector IM/IT Strategy, the mission statement speaks to the collective purpose of all IM/IT resources supporting the health system, rather than those resources supporting a particular organization.

The mission of IM/IT resources within the BC health system is to support and enable the achievement of health system priorities and goals through the effective management of information and related information technologies.

VISION

A vision statement is an intentionally idealized view of an intended future state; a description of where and what an organization would like to be in ten years. Like the mission statement, the vision statement in the context of the Strategy speaks to an all encompassing vision for IM/IT resources within the scope of the Strategy.

The health sector IM/IT vision is that health care information is accessible, when and where it is needed, to support personal health, health care decision making, and health system sustainability.

GUIDING PRINCIPLES/VALUES

Guiding principles speak to the broad philosophy that guides an organization throughout its operations in all circumstances, irrespective of changes in its goals, strategies, or even leadership. Examples of key guiding principles that guide the work of IM/IT resources within the BC health sector include:

- The appropriate level of security and privacy safeguards will always be established to enable the effective provision of care while satisfying relevant legislation, regulations and policies.
- IM/IT will be employed to address specific, clearly understood health sector clinical and business priorities, and not for its own sake.
- IM/IT solutions will be implemented as part of process to redesign business models and business processes to improve outcomes and efficiency.
- Goals will be pursued in a phased, iterative manner.
- Tangible business and IM/IT targets will be identified.
- Progress towards targets will be closely managed and course-corrections will be made as needed where targets are not being achieved in practice.
- The cost and complexity of IM/IT solutions will be monitored and contained.
- Citizens and clinicians will be engaged on an ongoing basis to ensure that IM/IT priorities, timelines and deliverables satisfy user needs.
- Where feasible, leveraging existing systems and services from within the health system will be considered prior to investing in new solutions.

2010 HEALTH SECTOR IM/IT STRATEGY OVERVIEW

Investments in information technology have improved many aspects of healthcare in recent decades but it is widely accepted that information technology has the potential to add significantly more value to the system. The challenge that BC and other jurisdictions face is where to focus limited IT resources and funding. In BC, direction is provided by the health system priorities, the innovation and change agenda, as illustrated in figure 1.

The triangular or funnel shape of figure 1 reflects a target decrease in relative system utilization and focus on acute care services. The transformed system emphasizes personal health and proactive self management and recognizes the importance of primary and community care services, where the majority of health services are delivered.

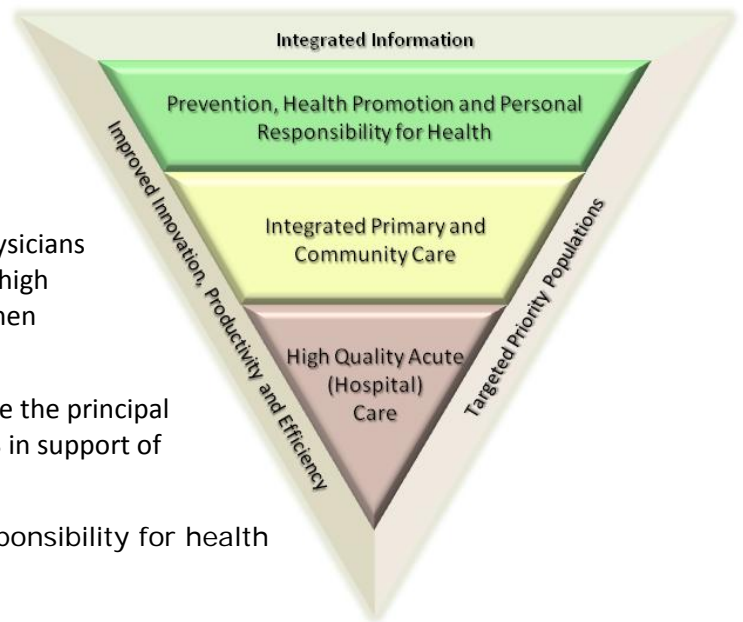
Citizen interactions with family and specialist physicians are the foundation of effective primary care but high quality acute care services must be accessible when required.

The following provincial IM/IT investments will be the principal focus of health IM/IT resources through 2012/13 in support of these health system priorities:

1. A focus on prevention and personal responsibility for health
 - Health Web 2.0 Strategy
2. Introducing a province-wide system of integrated primary and community care
 - Electronic Medical Records
 - Telehealth Solutions
3. Providing high quality and accessible acute care
 - Clinical Information Systems
4. Driving cost effective and efficient provision of health care services
 - Provincial Electronic Health Record

While these five investments will be the major focus of IM/IT effort in support of health service delivery over the next three years, the need for IM/IT support across all aspects of the health system cannot be neglected. A number of other significant IM/IT efforts that will be undertaken across the health system through 2012/13 are outlined as additional strategies.

Figure 1:
Illustration of Transformed Health System



Targeted Priority Populations

A consistent theme across the innovation and change agenda is the focus on patients with chronic illnesses and mental health and substance abuse conditions, as well as frail seniors. These priority population groups interact with the health system across a multitude of care settings, from physician offices to First Nations Health Centres, residential care facilities and hospitals. Improving access to coordinated, efficient, comprehensive care across health system service lines for those having chronic diseases and/or reaching advanced ages is a priority for the health system.

The management of chronic disease involves many caregivers and is a priority area for improving coordination across the system. Improving coordination between healthcare providers across all care settings will improve quality of care and convenience for both patients and providers. It may also result in cost savings while maintaining or improving service quality.

Within the spectrum of chronic illnesses, Chronic Obstructive Pulmonary Disease (COPD) is a significant disease that crosses multiple service lines and is a primary cause of hospital admissions. In 2009, BC's Primary Health Care Council, representing the Ministry of Health and the health authorities, singled out the treatment COPD as an area that could benefit from the introduction of supporting IM/IT enablers. As a result, where pilot projects are initiated in support of chronic disease management but limited to a subset of conditions, COPD will be considered a priority. Establishing solutions supporting COPD will establish a foundation supporting integrated care that can later be extended towards other conditions and patient groups.

FOCUSED INVESTMENTS

HEALTH WEB 2.0 STRATEGY

Over the last ten to twenty years the use of the Internet has increased dramatically and become an important part of people's daily lives, particularly for youth. Early use of the internet has typically focused on information dissemination and commerce, and is often referred to as web 1.0. BC's health sector, and the government in general, have made extensive use of these technologies to make information about the health system available to the public. Ministry and health authority sites provide information about health services and facilities while sites like Health Link BC² are trusted sites for information on topics such as health conditions and medications. In addition, there are a wide variety of health related sites on the internet maintained by private sector and non-profit organizations.

While there is not a universally accepted definition, the term web 2.0 is commonly used to refer to a generation of internet services including social networking services, online communities, blogs, podcasts, wikis, collaborative filtering, social bookmarking, tagging, instant messaging and other online tools. Whatever the specific tool or service, the focus is on user participation, openness and collaboration. Practical examples that most people are familiar with today include online communities where users can participate and share content, such as YouTube, Flickr, Facebook, and microblogging such as Twitter.

² [Health Link BC](#)

The use of web 2.0 services in the health space, sometimes referred to as health 2.0, has the potential to significantly change healthcare as it delivered today. General practitioners, specialists and other health care providers can have the ability to collaborate with each other and with patients, to personalize health care and promote health education. Patients can have the ability to provide input and feedback on the health system, obtain interactive feedback on their health and share similar experiences with others. Sites such as [HowsYourHealth](#)³ and [patientslikeme](#)⁴ are just two of many existing examples.

Looking to the future, the Ministry will develop a strategy for the development of a comprehensive web 2.0 health presence, which, in its design and components, will:

- consider the Health sector as a whole for a coordinated approach across Ministry program areas;
- reflect citizens' service needs and their Web 2.0 behaviors for accessing Health sector information; and
- take best advantage of social networking/media tools for active and interactive collaboration with and between citizens and health care professionals.

The use of web 2.0 services and tools has particular potential for supporting the focus on prevention, health promotion and personal responsibility for health. While a more comprehensive sector approach is being developed, a first step towards a health web 2.0 presence will be initiated with a focus on this area. Lessons learned will serve to inform the leveraging of these tools more broadly across the sector.

Healthy Families BC - Prevention and Health Promotion Agenda - Social Media

The Healthy Families BC prevention and health promotion agenda targets investments and efforts towards prevention initiatives that address physical inactivity, unhealthy eating and obesity through key strategies to measurably reduce risk factors and the incidence of chronic diseases. This initiative will begin a phased implementation of social media tools, focusing first on web 2.0 technologies and a social networking presence. Projects will begin building health sector social media experience and lessons learned to benefit a more expansive use of Web 2.0 technologies across the sector and spanning all shifts of citizen participation, self-service and business innovation.

Additionally, each key strategy in this Healthy Families BC prevention and health promotion agenda will have a number of component programs with expectations and opportunities to take advantage of web 2.0 tools to facilitate both citizen participation and self-service.

BC CareCard Transformation

The replacement of BC's existing CareCard is a foundational enabler for electronic citizen interaction with health system services. Working together with the Ministry of Citizen Services and the Insurance Corporation of British Columbia, the Ministry of Health will establish a replacement card that will be aligned with and integrated into the driver's licensing program.

The primary objectives for a replacement card are to confirm identity and eligibility at all points of care in order to:

³ [HowsYourHealth](#)

⁴ [patientslikeme](#)

- Reduce consumer fraud and identity theft resulting from misuse;
- Ensure the delivery of health services to the right person and enhance accuracy of health record information;
- Enable secure online patient access to information and services; and
- Enhance privacy protections.

Key features of the new card will include a photo, anti-forgery features, and an expiry date.

Consumer Health

As citizens become more engaged in the health system via government or private health web 2.0 services, the line between proactive citizen self management and the patient as an integrated member of their care team can become blurred. It has long been recognized that the active involvement of persons with diagnosed illnesses in their own treatment improves the care experience and produces better results. That concept is embraced in the 'Patients as Partners' philosophy, based on the BC Primary Health Care Charter as well as a provincial initiative that focuses on value for patients and patient-centred principles for care delivery. The three main priority areas within Patients as Partners are:

- Individual health care
- Shaping the primary Health Care System, and
- Bringing in the Community.

Supporting the Patients as Partners philosophy, Impact BC has launched a new program with the Ministry of Health called the Patient Voices Network. This initiative is a mechanism to empower patients and their families to participate in primary healthcare changes.

Moving forward, providing patients with access to their own personal health information will be a key step in establishing the patient as an effective member of their own integrated health team. To that end, a consumer health solution is being piloted by the FHA focusing on a small, defined patient population and a targeted health care provider team.

This pilot will test a number of enabling technologies while demonstrating the benefits of providing patients with electronic access to their personal health information. The findings of the pilot project will help to inform the development of a provincial strategy for consumer health solutions that is consistent with the Patients as Partners philosophy and supports integrated health teams.

ELECTRONIC MEDICAL RECORDS

The implementation of Electronic Medical Records (EMRs) in physician offices is a foundational enabler supporting integrated primary and community care and one of three components within the scope of BC's provincial eHealth initiative.

Through the 2007 Physician Master Agreement⁵, the British Columbia Medical Association and the provincial government agreed to work together to move general practitioners and specialists from paper-based to electronic-based practices. This is being accomplished through the deployment of EMRs within physician practices. The agreement provides \$107.8 million over six years to implement electronic medical record systems. The Physician Information Technology Office (PITO)⁶ was established in 2007 to oversee the EMR implementation effort.

The complete scope of the EMR, as outlined in the Physician Master Agreement (2007), includes:

- professionally hosted Electronic Medical Record applications;
- implementation support for the EMRs;
- secure, high-speed network; and
- email.

The effective implementation of EMRs in physician offices can provide numerous benefits, including:

1. Improved health outcomes for patients through:
 - Integrated information between care settings
 - Improved physician access to complete and organized clinical information
 - Automated decision support and reminders
 - Reduced duplicate clinical tests and assessments
 - Faster access for care providers to lab results and medications
2. Improved security and privacy through:
 - Strong authentication, roles-based access, auditing, masking, and data centre security.
3. Productivity improvements for physicians through:
 - Faster prescription writing, referrals, and recalls
 - Less time spent searching for information as a result of simple searches and filters

“eHealth” is a term often used as a generic reference to information technology solutions supporting healthcare delivery, or, more specifically, to the use of internet technologies supporting healthcare delivery.

BC's “eHealth Initiative” refers to three specific projects:

- Electronic Medical Records,
- Telehealth Expansion, and
- Provincial Electronic Health Record

⁵ http://www.health.gov.bc.ca/msp/legislation/pdf/2007_Physician_Master_Agreement_all.pdf

⁶ <http://www.pito.bc.ca/>

- Improved access to the latest reference material, guidelines, templates and tools to help manage patients with chronic diseases
- Reduced paperwork
- Better inter-office communications using EMR built-in systems

BC's EMR initiative has the following specific objectives:

1. Expand BC physician adoption of EMR systems. This includes managing patients' clinical information as opposed to merely billing and scheduling information.
2. Promote a higher level of security through the hosting of EMR applications by professional, third-party application service providers.
3. Enable physicians to connect to provincial eHealth information and services through their EMR system.
4. Standardize EMR offerings across the province, upholding higher levels of security, privacy, usability, functionality, support, and implementation services.

In September 2010, PITO initiated a new program to further accelerate the adoption of EMRs in special physician offices. The Alternative Specialist Funding Program acknowledges the widely varying needs between specialist types. The program encourages EMR adoption by providing incremental funding based on the defined levels of 'meaningful use' that specialists choose to implement and is based on the clinical impact that level of use can support.

eReferrals

The ability to send referrals and receive subsequent consult responses is perceived as priority enabler supporting integrated primary and community care and is a service physicians would value through their EMRs.

There is a recognized need for a provincial eReferral strategy to address this requirement. A provincial task group will be established to review eReferral requirements to determine exactly what is required from a solution in BC. The task group will involve PITO, Ministry of Health, health authority, General Practice Services Committee and Specialist Services Committee personnel. The task group will report its findings to the PITO Steering Committee and inform direction on a provincial eReferral strategy.

EMR Integration

The initial deployment of EMRs in physician offices establishes an EMR foundation and represents the first phase of an EMR Integration Strategy that moves towards the realization of full EMR benefits.

Phase 2 of the EMR Strategy includes PITO EMR integration with core provincial systems enabling the following services:

- Search for and register patients, through integration with the provincial Electronic Master Patient Index (EMPI) system;
- Search for providers, through integration with a provincial provider registry system,

- ePrescribing and access to medication profiles, via PharmaNet; and
- Review historical lab results, via integration with the Provincial Laboratory Information Solution.

Planning for the Phase 2 project began in October 2010 and the objective, by March 2012, is to have integration complete for at least one PITO EMR with all services in operation.

While phase details have yet to be established, subsequent EMR Strategy phases will focus on the following areas:

- Phase 3 - Chronic Disease Management and High-Value Information Services.
- Phase 4 - General Benefits.

Health Authority EMRs

While the PITO program supports the implementation of PITO EMRs in private practices, BC's health authorities are implementing EMRs in a variety of primary and ambulatory care settings.

- FHA has deployed EMRs in primary care clinics and, through their myHEALTHPlan initiative, will use EMR solutions to demonstrate the electronic development and sharing of comprehensive care plans.
- IHA will complete the deployment of EMRs in its primary care clinics.
- NHA will implement a standard EMR solution in ambulatory clinics.
- VCHA will complete the implementation of EMR systems in its primary care clinics, and will implement a PITO-endorsed EMR solution in Providence Health Care ambulatory clinics.
- VIHA will implement the Cerner Ambulatory Integrated Record (CAIR) solution in ambulatory care clinics.

PROVINCIAL TELEHEALTH

Simply put, telehealth services provide the capability to extend the reach of primary, community, and even acute care services beyond their traditional delivery mechanisms. The expansion of telehealth services is a component of the provincial eHealth initiative. It is a priority for integrated primary and community services and has the potential to enable improved care for priority patients with chronic illnesses.

Telehealth uses videoconferencing and supporting information technology to enable clinical consultation, health care management, general health promotion and continuing professional education when the participants are in different or geographically separated locations. There has been a significant expansion of telehealth services in BC during recent years with a number of services being implemented across multiple health authorities as well as targeted services being implemented to address priority needs within individual health authorities.

Key enablers that will support the expansion of telehealth services in BC include:

- A provincial scheduling system for scheduling clinical and educational consultations. A provincial system will be piloted across the lower mainland,

- A provincial consolidated videoconferencing bridging service, and
- A provincial consolidated videoconferencing helpdesk service.

TeleHome Care, TeleThoracic, TeleOncology, and TeleOphthalmology services have been implemented within one or more health authorities and results will be reviewed and a strategy for further expansion considered.

Further opportunities to review and expand existing regional telehealth programs in the province are apparent, as positive clinical outcomes, cost avoidance data and foundational components to support expansion become available and solutions implemented.

Telehealth services are increasingly being recognized as a cost effective and valuable service delivery mechanism. A Provincial Telehealth Office has been established within the Ministry of Health and has been active in coordinating the expansion of telehealth services across the health authorities. Moving forward, the office will put a particular focus on the area of home health monitoring and its potential to enable patients to remain longer in their homes.

Home Health Monitoring

While there are a variety of terms and definitions used in the telehealth space, home health monitoring, teleHomecare and remote monitoring are typically used to refer to services that give a clinician the ability to monitor and measure patient health data and information over geographical distances. TeleHomecare monitoring supports more proactive management of chronic diseases, resulting in:

- Improved acute care discharge planning,
- Reduction in emergency room visits,
- Reduced patient travel,
- Improved patient satisfaction,
- Extended geographic reach of the health system to all points of care, and
- Extended system capacity/health human resources.

In BC, IHA and VIHA have successfully carried out telehomecare pilot projects that have demonstrated the potential benefits. Both pilots deployed remote devices into homes which transferred patient data via phone lines to central monitoring application software, monitored by clinicians. This model represents just one of a number of delivery options that will be reviewed in the development of an appropriate home health monitoring strategy for provincial deployment.

CLINICAL INFORMATION SYSTEMS

Clinical information systems (CIS), or hospital information systems, are comprehensive, integrated information system designed to manage clinical aspects of hospitals and other care facilities. They are an essential tool supporting the delivery of high quality acute services in modern hospitals. BC's health authorities have made significant investments in Cerner and Meditech CIS solutions as strategic acute care platforms in recent years but this work is not complete.

Moving forward, the provincial strategy is to continue to establish a robust clinical systems foundation for acute care facilities across BC, leveraging these two strategic vendor-based solutions. These foundational systems will enable improved acute care delivery through the implementation of standard clinical processes based on best practice. Further Investments in older existing CIS solutions will only be made where essential to mitigate risk.

Over the next three years it is anticipated that each BC health authority will make substantial progress in their acute care systems foundations:

- FHA's Meditech system, myHEALTHSystem, will be upgraded and consolidated onto a single client/server platform.
- IHA's Meditech system, CONNEX, will be upgraded to enable the implementation of common nomenclature standards and the optimization of key clinical processes across the health authority.
- NHA's Cerner system, HealthLinkNorth, will be completed at twenty-five sites across the region, covering registration, laboratory, radiology, pharmacy and the clinical viewer.
- PHSA's Cerner implementation will be completed at BC Children's Hospital and BC Women's Hospital and expanded to other facilities. Priority tactical upgrades will be made to aging acute systems within VCHA to mitigate the risks of system failure and resultant clinical impacts.
- VIHA's region-wide Cerner implementation will be advanced to the next generation of capability, including full-scope nursing and physician documentation, and computerized provider order entry.

PROVINCIAL ELECTRONIC HEALTH RECORDS

The development of an Electronic Health Record (EHR) system for BC is the principle system development project within BC's provincial eHealth initiative. An EHR system is comprised of a number of information systems that are linked to enable patient health information to be securely stored and shared electronically. The benefits of EHRs are widely recognized and include:

- improved quality patient care and reduced medical errors for patients,
- expanded access to high-quality care,
- improved patient data security and privacy protection,
- better control of costs through the avoidance of unnecessary costs and improved productivity, and
- more effective management of public health.

EHRs represent an innovation that supports healthcare delivery across all services lines, and integrated primary and community care in particular, by making valuable patient information accessible to authorized users in any care setting.

There are, theoretically, a virtually infinite number of clinical data sets that could be incorporated into an EHR. The provincial eHealth initiative's scope includes an EHR with the following specific clinical data repositories:

- patient laboratory results,
- medication histories,
- diagnostic images, and
- immunization history.

This scope is consistent with the pan-Canadian EHR blueprint and associated standards developed through Canada Health Infoway⁷. While the provincial EHR is expected to continue to evolve over time, immediate EHR efforts are focused on completing the current scope under the eHealth initiative by the end of March, 2012.

The EHR's clinical information will be made available to authorized care providers via the EHR's viewer and other end user systems, including PITO EMRs. In addition, physicians will have the ability to send prescriptions directly to pharmacies using the ePrescribing functionality.

The development of all in scope EHR systems is complete with the exception of planned enhancements to the province's PharmaNet system which will provide patient medication information and the ePrescribing functionality. The PharmaNet changes will be completed in parallel with the continued deployment of EHR systems. Through September 2010, more than 3,000 clinicians across BC's lower mainland already had access to the eHealth viewer. Expansion throughout the lower mainland will continue as a preliminary focus in order to maximize system benefits through the targeting of high population density areas.

PANORAMA

Panorama is a Public Health Surveillance application that BC has developed for Canada Health Infoway for implementation across Canadian jurisdictions and beyond. Panorama supports all healthcare service lines as a component of the provincial EHR but plays a more comprehensive role as an information system enabling better monitoring and responses to population health trends.

Along with providing the patient information history information as a component of the provincial EHR, Panorama includes seven major integrated modules:

- Communicable Disease Case Management
- Immunization Management
- Outbreak Management
- Notifications Management
- Vaccine and Inventory Management
- Work Management
- Family Health

BC has enhanced Panorama's original design with Family Health functionality, including maternal, infant, child, youth and adult health prevention and promotion functionality.

Panorama will improve BC's ability to perform public health surveillance and deliver public health services. It enhances the ability of public health professionals to work within and across multi-disciplinary teams, regions, provinces and territories to:

- Improve health outcomes related to communicable diseases.
- Identify, investigate and manage communicable disease cases and contacts.

⁷ [Canada Health Infoway](#)

- Identify, investigate and manage communicable disease outbreaks and risks to public health related to communicable diseases.
- Communicate important public health information related to communicable diseases through alerts and notifications.
- Manage vaccine and materials inventory efficiently, reducing waste and improving speed of product distribution.
- Manage immunization programs efficiently.
- Provide maternal, infant, child, youth and adult health prevention and promotion activities and development of action plans with individuals, families and communities.

Panorama's modules will be implemented within the next three years, beginning with the inventory module at the BC Centre for Disease Control in 2010. Implementation activities will be coordinated to work within the public health service delivery cycles. The preliminary focus will be on the implementation of the inventory, immunization, and Family Health modules.

EHR Integration

There are many opportunities to leverage the provincial EHR's initial eHealth scope to achieve additional system benefits. These benefits may be realized through the further integration of provincial EHR systems to existing health system applications. Moving forward, the following areas of integration will be analyzed as potential future investments:

1. Client Identity Management integration with health authority point of service systems - will provide the foundation for delivering a longitudinal view of a patient's medical records.
2. Provider Identity Management integration with health authority clinical systems - will provide the foundation to ensure that results are distributed to the correct healthcare provider.
3. Longitudinal EHR Viewer integration with hospital clinical information systems – will provide clinical access to provincial lab data and diagnostic images and reports.
4. PharmaNet integration with hospital clinical information systems - will enable improved medication reconciliation at admission to and at discharge from hospitals and ambulatory facilities.
5. Results distribution through EHR infrastructure – will enable lab results to be electronically distributed to ordering physicians and may be further leveraged for the broader distribution of clinical test results.

User Management

As the health systems transitions from an environment characterized by health authority specific clinical applications towards a new generation of shared provincial health applications integrated across health authorities, the management of system users becomes a challenge that must be addressed. Thousands of BC clinicians will require access to these systems and all must be uniquely identified and properly authorized to access patient information.

To address this requirement, BC will implement a decentralized model for managing user identity and establish a federated trust fabric across all health authorities. This model will facilitate single sign-on solutions and limit the number of User IDs required by clinicians. The implementation of the model will require significant effort from each health authority:

- establishment of new business process,
- implementation of new technologies to support user enrolment and account management,
- assignment of appropriate access roles to system users,
- implementation of a change management strategy, and
- implementation of federation technologies.

This user management model will be applied initially to the provincial EHR Viewer and the Panorama application but may be subsequently leveraged in support of other provincial systems.

ADDITIONAL STRATEGIES

The focused investments represent the major IM/IT investments supporting healthcare delivery. Additional IM/IT strategies are represented below and have been grouped under the following categories:

- Health System Performance Monitoring and Reporting;
- Standards;
- Community Care Systems;
- First Nations Health;
- British Columbia Ambulance Services; and
- Consolidation and Infrastructure.

HEALTH SYSTEM PERFORMANCE MONITORING AND REPORTING

The effective monitoring and reporting on health system performance and the health of BC's population is a key strategy supporting the improved innovation, productivity and efficiency in the delivery of health services.

HealthIdeas

HealthIdeas is the Ministry of Health's principal decision support platform and forms the foundation of a provincial health information infrastructure by providing a corporate integrated data warehouse resource. The data warehouse environment enables a strategic "secondary use" information management framework for the health sector, and facilitates the convergence of health information management approaches, principles and architecture.

The data warehouse provides an environment that is secure, auditable and integrated, making it an extremely powerful tool for:

- monitoring the effects of policy and services on health outcomes;

- planning for new health services;
- doing horizontal policy analyses across large health services databases;
- supporting the work of auditors in ensuring public funds are appropriately spent; and
- reporting to system stakeholders, including the public, on how public funds are used.

At the start of 2010/11, several *Healthideas* data warehouse services had been operationalised, integrating data from the largest and most widely used data sources in the Ministry of Health, including hospital discharge abstracts, Medical Service Plan fee for service, PharmaNet and Dispensing Event (medication history).

The *Healthideas* platform provides enhanced security and privacy over legacy systems through detailed object security classification and fine-grained role based access for analyses. A tiered zone based technical architecture provides for improved access security management.

Over the next three years, the strategy for *Healthideas* is to bring additional information services and data sources into the data warehouse environment and integrate with the security and reporting infrastructure. This will better support patient-focused funding initiatives while reducing the information management cost to the Ministry by retiring and consolidating legacy program based decision support systems.

Also, in response to demand for more self service and end-user driven reporting capabilities, a Business Intelligence tool definition and selection project is envisioned within the next two years.

Mental Health and Addictions Minimum Reporting Requirements

The Ministry of Health completed the Mental Health and Addictions Minimum Reporting Requirements (MHA MRR) project in 2009/2010, with the completion of an integrated system for the collection of mental health and substance use data within the *Healthideas* environment. The MHA MRR will allow the tracking of resources and service utilization across the integrated range of client services for the first time in BC.

The MHA MRR data supports the 10-Year Mental Health and Substance Use Plan, performance monitoring, and integrated planning for the treatment of clients with both mental health and substance use needs. The initiative is a collaborative endeavor involving the Ministry and the health authorities. The NHA has implemented MHA MRR. The remaining health authorities are at various stages of MHA MRR implementation and will progress towards completion over the next two fiscal two years.

Moving forward, MHA MRR will be further enhanced through the collection of additional resource capacity measures from the health authorities, such as the number of available beds, as well as data on MHA services provided by contracted agencies.

Air & Water

The capability of monitoring and reporting on air and water quality is a strategy supporting improved illness and injury prevention. To address this requirement, the Ministry will assess the feasibility of acquiring drinking water safety related data from the health authorities. A central repository for the data will be established to support the Ministry in meeting its policy, public

accountability and reporting responsibilities. The *Healthideas* data warehouse environment will be considered as an option to satisfy this requirement.

InterRAI Data Warehouse

Resident Assessment Instrument (RAI) assessment tools are used by the health authorities to assess home and community care and residential care clients. The Ministry of Health will develop a new data collection system that will receive the RAI data (via the Canadian Institute for Health Information), along with outcomes and scales generated from it, to use for analysis and long range planning for the Home and Community Care Sector. The *Healthideas* data warehouse environment will be considered as an option to satisfy this requirement.

The data is required for analysis and long range planning for home and community care services for a growing population that is largely elderly and frail, many with complex and chronic diseases. In addition, the data will be linked to other Ministry databases to inform the Ministry and the health authorities about patterns of use across the health care system, and provide data for determination of areas where improvements can be made.

Emergency Department Reporting

The National Ambulatory Care Reporting System (NACRS) is operated by the Canadian Institute for Health Information (CIHI) and contains data for hospital and community based ambulatory care, including day surgery, outpatient clinics and emergency departments. The system facilitates comparative reporting and supports:

- facility and jurisdictional decision making;
- the development and use of analytical tools; and
- research and analysis.

While a number of facilities in BC are submitting NACRS data, it has not been widely adopted across BC emergency departments. Moving forward, NACRS participation will become mandatory at the fifteen high volume emergency departments across the province. The health authorities will work with CIHI to develop individual implementation plans with a target for all health authorities of the Fall, 2012. The ability to report on emergency room data supports patient-focused funding, a key strategy to ensure high quality acute care services.

AMCARE

Aggregated Metrics for Clinical Analysis Research and Evaluation (AMCARE) was established in partnership between NHA and the University of Northern British Columbia (UNBC) to support primary care practice improvement. A Quality Metrics Framework (QMF) provides primary care physicians with metrics and information to aid them in primary health care improvements for Northern British Columbia. The framework provides a secure method for aggregated data collection, analysis, and reporting. Regional and demographic comparators help to inform potential changes to primary health care strategies while maintaining patient privacy and confidentiality.

AMCARE has established critical links between research, evaluation, and quality improvement

efforts to support the ongoing development and implementation of initiatives such as Care North, NHA's program to build on its past primary care successes. AMCARE has been a great success to date within NHA and the program will be looked at for its potential to enable primary care physicians outside the north to assess their overall effect on patient care within their regions.

STANDARDS

The establishment of clinical process and documentation standards across the healthcare continuum is a key enabler supporting the implementation of effectively integrated information technology solutions within the health system. While BC's health authorities have made some inroads into establishing standards in some areas, common provincial clinical documentation standards are still required in many primary care, community care, public health, acute care and First Nations community settings. Once established, these provincial standards can be implemented within the appropriate electronic systems, such as EMRs.

Establishing and implementing provincial standards across health settings is a massive undertaking that will take years to complete and require a substantial organizational change management effort. Work will progress incrementally and will be prioritized to address high priority processes and related documentation first, such as the reporting of discharge abstract data to enable patient-focused-based funding models.

Order Set standards are also high priority for the health system. The use of standard order sets to minimize incorrect or incomplete medical orders, such as prescribing, contributes to standardized patient care and increased patient safety. Well designed standard order sets have the potential to:

- Improve care coordination by communicating best practices;
- Reduce variation through standardization;
- Reduce the frequency of clarification follow-ups;
- Improve workflow; and
- Reduce the potential for medication errors.

In most instances, health authority CIS systems allow for standardized order sets. Clinical assessments can be linked to suggested care plans and/or clinical interventions clinical best practices are supported through critical pathways, variance tracking, and clinical documentation from all caregivers. Care functionality can be customized within the CIS to standardized practices as developed.

A number of health authorities have developed standardized order sets in some areas while other programs are at varying stages of maturity in standards development. At FHA, for example, the Emergency and Surgical programs are two programs that are quite far along in their maturity of standardized order set and many of their order sets are available in Fraser's CIS.

Most health authorities are early in their maturity with electronic, standardized clinical documentation, care planning / pathways and protocols across their clinical programs. This level of maturity needs to be increased to enable the health authorities to progress with implementing these standards into an electronic format within their CIS systems. In addition, there is a need to develop a standardized clinical nomenclature to ensure data entered into CIS systems will make sense when it is later used for information and knowledge.

To advance progress on the establishment of standards, the Health Chief Information Officers will work with the Clinical Integration Advisory Council to establish a working group focused on the subject.

COMMUNITY CARE SYSTEMS

PARIS (Primary Access Regional Information System) is a community based health care system and supports integrated primary and community care. PARIS, however, is not a provincial initiative and planned implementations are limited to the lower mainland and VIHA.

PARIS is used by community health nurses, health care workers, occupational therapists, physicians, and social workers, as well as administrative staff, to deliver a range of care services to clients across community programs, including:

- primary care – for adult and children;
- home- and community-based residential health care for adult and children;
- mental health services;
- addictions services;
- preventative health;
- rehabilitative care; and
- palliative care.

The implementation of the PARIS community care system will be completed in VCHA, FHA and VIHA. The implementation will include Health Promotion & Prevention, Chronic Disease Management, Home Health & End of Life Care, Geriatrics & Residential/Supported Living Services, and Mental Health & Addictions. PARIS will also be integrated with Panorama, the province's public health surveillance system to streamline integrated processes covering public health and community care.

FIRST NATIONS EHEALTH

Addressing the gap in healthcare for First Nations communities is a key strategy reflected in the Ministry Service Plan. The Tripartite partners will work collaboratively to advance strategic priorities for First Nations eHealth, in particular working to effectively and efficiently coordinate the advancement of:

Increased First Nations access to health services through eHealth-enabled solutions

- Investment in video-conferencing and associated telehealth-enabling infrastructure and services, and integration with regional and provincial telehealth services and solutions.
- Expansion of existing health system telehealth services to First Nations Health Centres.
- Support eHealth-enabled solutions for distance education, skill updates and peer collaboration for community based service providers.
- IM/IT enablement of First Nations Health Centres for clinical and operational information management.
- Supported migration of Health Centres from paper-based to electronic records management.
- Enhance Health Centre capacities in data security and privacy measures and related policies and practices.

- IM/IT enabled minimum mandatory accountability reporting requirements for Health Centres.

Improved continuity of care for First Nations clients across jurisdictional service providers.

- Advance eReferral integration and development between First Nations Health Centres and regional and provincial service providers.
- Support province wide IM/IT enabled client referral and admissions processes for First Nations Health Centers.
- Promotion of eHealth-enabled tools to support standards-based collection and reporting of Chronic Disease Management Information.

Foundational IT/Network infrastructure and related capacities at the First Nations Health Centre level and for BC First Nations Health sector.

- Investment in improved connectivity for BC First Nations Health Centres and communities.
- First Nations eHealth Network with linkage to BC eHealth Network Gateway.
- Support Data-Centre hosting and shared support options for community information management solutions.
- Support enhancement of Health Centre IM/IT environments and services.

First Nations Health inclusion as integrated sector with BC Provincial eHealth Framework.

- Enable First Nations eHealth Network interoperability with provincial network infrastructure (i.e. eHealth Network Gateway, Private Physician Network, Extranet, etc.)
- Advance First Nations Integration with provincial architecture and infrastructure (i.e. provincial EHR)
- Enable First Nations access to, and adoption of, appropriate provincial systems (e.g. Panorama).
- Inclusion of First Nations requirements with appropriate and relevant provincial health information systems.

Leverage provincial IM/IT shared services opportunities for First Nations health sector.

AMBULANCE SERVICE SYSTEMS

Optimizing the efficiency and effectiveness of the BC Ambulance Service (BCAS) is a priority in supporting access to high-quality hospital services.

BCAS is supported by a network of telecommunication and technology platforms. BCAS continues to consolidate and optimize information technology and information management systems to provide frontline paramedics, managers and administrative employees with improved tools and information, while laying the foundation for future enhancements.

In mid-2010 BCAS made the final installment in its Dispatch/Communications Centres and all three centres now run on NetCAD, a consolidated, full function platform designed to improve the communication of event and resource information among all dispatch centres, field paramedics and first responders. Having all dispatch centres on a common computer platform allows each dispatch centre to act as a back-up for another in the event of technical failure, facility issue, or other unforeseen circumstances.

Created to meet current day-to-day business needs, while improving communications between centres, the system enables the use of new technologies such as Automated Vehicle Location (AVL) monitoring and Mobile Data Terminals. These technologies extend the dispatch system into the ambulance, providing paramedics with patient information, call location and the ability to update call status.

The increased use of technology through NetCAD also helps reduce unnecessary manual processes and contributes to enhancements in real-time operational analysis and reporting.

CONSOLIDATION AND INFRASTRUCTURE

Health Shared Services BC (HSSBC)

Health Shared Services BC was launched in 2009 with a mandate to find opportunities for health authorities across the province to improve cost effectiveness and enhance service quality. By working collaboratively on common services, Health Shared Services BC ensures health authorities get the most value for every dollar spent. Health Shared Services BC is a unique initiative for the province. The organization has been designed in a way that enables health authorities to achieve more collectively together than they could independently.

Health Shared Services BC contributes to the goal of sustaining high quality patient care through more efficient and cost-effective services in support of a sustainable, publicly funded health care system.

Technology Services

Health Shared Services BC is already consolidating Technology Services operations and infrastructure across PHSA, VCHA and FHA in order to create a solid technical foundation for the health authorities. The result will be an integrated and standardized clinical and business operation within a sustainable technical operating environment.

Health Shared Services BC Technology Services include:

- Development of standards and policies for healthcare technologies and security,
- Acquisition, delivery and support of standardized desktop and mobile technologies (Service Desk)
- Provision of standard data network, voice, video, and collaboration technologies
- Monitoring of backend technologies (data centres, core communications closets, servers and disk storage)
- Establish cost-effective infrastructure capacity, including but not limited to
 - eHealth Network Gateway/Private Physician Network
 - Provincial Data Centre
 - Desktop management and services
 - Federated User Identity
 - Equipment Maintenance & Break/Fix Replacement
 - Unified communications

Additional benefits of shared technology services include:

- Reduced costs as a result of standardized procurement and combined negotiating solution
- Reduced costs as a result of consolidated networks, data centres, service call centres and related support models
- Enhanced information flow as a result of common and integrated infrastructure serving clinical and business operations
- Improved customer/user experience as a result of common standards and levels Of service for technology support consistent with the needs of health authorities
- Optimized support by sharing specialized skills and more effective deployment of existing human resources and expertise

Health Shared Services BC has defined a process to handle requests for service to ensure they are delivered in a timely, high-quality, and cost-effective fashion. The improvements to Technology Services that result from shared services are based on industry standards, leverage existing best practices and work well with the processes used by health authority IM/IT personnel.

Lower Mainland Consolidation

Lower Mainland Consolidation (LMC) is an innovative approach to improve health care services and value for investment through cross-health authority amalgamation of select service areas. The lower mainland health authorities (FHA, VCHA and the PHSA) and the Ministry launched the LMC initiative in August 2009, with a goal to achieve a total of \$100 million in cost savings. Consolidation saves money by reducing duplication, increasing standardization and process efficiency, leveraging buying power, and sharing resources and knowledge.

Within the LMC model, one organization assumes accountability for each consolidated service across the Lower Mainland. The most significant consolidated services from an IM/IT perspective are:

PHSA-led IM/IT consolidation across VCHA and the PHSA: the consolidated IM/IT service creates opportunities to save money through economies of scale and leveraging existing solutions such as PHSA's Cerner CIS implementation; rationalizing and standardizing applications and solutions; and improving connections and integration that support clinical information following the patient across care transition points within the two health authorities.

PHSA-led consolidation of Pathology & Laboratory Medicine: a key technology enabler supporting the consolidation of laboratory services includes the implementation of a single laboratory information system (LIS) for PHSA and VCH (based on VCH's Sunquest LIS), which will share information across the Lower Mainland with FHA's Meditech LIS.

VCH-led consolidation of Medical Imaging: the initial focus is on centralizing the booking and scheduling functions for Medical Imaging to support rationalization of imaging modalities, supported by a scheduling solution for the lower mainland (PHSA and VCHA). Consolidation of medical imaging services also creates opportunities for an integrated and rationalized Radiology Information System and Picture Archiving and Communication System solution which will support access to diagnostic images across the Lower Mainland.

PHC-led consolidation of Health Information Management: key areas of focus include integrated technology solutions for dictation/transcription, coding/abstracting, as well as consolidation of Registration and Patient Identity solutions (still determining feasibility given the disparity of CIS solutions across VCHA).

FH-led consolidation of Pharmacy: IMIT integration implications are yet to be determined.