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First Nations and Inuit Health Branch (FNIHB)
Health Canada

Guidelines for the FNIHB eHealth Infostructure Program (eHIP)

March 2012



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1.0 Introduction

1.1 *eHealth Infostructure: A Definition*

eHealth Infostructure is the development and adoption of modern systems of information and communications technologies (ICTs) for the purposes of defining, collecting, communicating, managing, disseminating and using data to enable better access, quality and productivity in the health and health care of First Nations and Inuit.

Within this context the eHealth Infostructure Program (eHIP) works towards the modernization, transformation, and sustainment of health care services in First Nations and Inuit communities. It supports the combination of information, electronic health applications, technology and people with the intent to:

- Provide optimal health services delivery;
- Provide optimal health surveillance;
- Provide effective health reporting, planning and decision making; and
- Provide integration/compatibility with other health services delivery systems.

1.2 *Purpose*

eHIP Guidelines identify the activities, policy positions and future directions of existing program elements of the First Nations and Inuit Health Branch (FNIHB) National Office and the seven Regional offices.

The eHIP and these guidelines have evolved out of the need for FNIHB to align with First Nations eHealth strategies, health plans, and policy directions, as well as the movement by provinces/territories and the health industry towards increased use of information and communication technologies to support health service delivery and public health surveillance.

FNIHB strives to ensure eHealth Infostructure related policy development is relevant, well-informed and coordinated with key partners. This is done by continuously sharing knowledge on health information and communications technologies and innovations with private sector organizations, other government entities at the provincial and federal levels, and First Nations through formal and informal networks.

This guideline document serves to clarify the FNIHB perspective around key eHealth Infostructure areas such as:

- Vision, strategies, policies and plans;
- Specific First Nations and Inuit eHealth issues;
- Risk identification and management;
- Implementation funding and sustainability;
- Data management (access and sharing) and governance;
- Roles and responsibilities;
- First Nations capacity to operate and manage eHealth Infostructure;

- Community broadband infrastructure;
- Regional First Nations eHealth planning, governance and organization development;
- Evaluation and performance measurement;
- Interoperability between provinces/First Nations/federal partners;
- Linkage with community health planning activities; and
- Knowledge dissemination and translation.

It is acknowledged that present resource levels are insufficient to fully implement all activities and strategies articulated in this document. For this reason, this document is considered independent of funding approaches or issues. This is an evergreen document and will be updated as required. **Based on national program funding available for fiscal year 2011-12, the top three Branch priorities are: Telehealth Services, Panorama (Public Health Surveillance systems) and Broadband Connectivity.**

1.3 The Canadian Context

The health care system in Canada is a complex interaction of jurisdictions, technologies, people, and organizations. Over the past decade, technology and health information management have come to the forefront as a potential means to address some health system challenges and assist in system reform. More and more, the delivery of health care in provinces and territories incorporates technology and with it the requirement for greater consistency, coordination, sharing, timeliness and accuracy of health data collection and analysis, while continuing to protect the privacy of all Canadians. eHealth technologies and streamlined business processes have the potential to improve health services access, quality, and efficiency.

Provinces and territories, in collaboration with Canada Health Infoway (*Infoway*), are implementing all facets of the Interoperable Electronic Health Record Infrastructure including: the Health Information Access Layer (HIAL); Registries (client, provider and location); Drug Systems; Laboratory Systems; Diagnostic Imaging; Telehealth; Public Health Surveillance (*Panorama* or equivalent); and Electronic Medical Records (EMRs) at points of care (hospitals and physician offices).

The Government of Canada, through *Infoway*, supports these provincial and territorial efforts by providing funding and collaboratively developing inter-jurisdictional standards, interoperability requirements and national strategies.

1.4 The First Nations and Inuit Health Context

Within Health Canada, eHealth implementation, alignment, integration and interoperability into provincial systems fall under the mandate of FNIHB.

FNIHB involvement with eHealth can be traced through a series of evolving approaches starting in the mid-1990s when the Branch began to slowly introduce the concept of ICTs in Regions and First Nations communities and test various approaches to Telehealth. By 2005, eHealth began to evolve from a series of innovation projects to a more comprehensive program as a result of the growing need for health information by health care providers, the increased role of First Nations in the delivery of health care services and the increase in collaboration between

federal, provincial and First Nations stakeholders. As more and more infrastructure rolled out, the need to access information and be interoperable with health delivery partners became the priority. The focus has now shifted from a specific point-of-service solutions approach to a systemic, integrated health service delivery continuum with information as the reference point.

1.5 Health Infostructure Strategic Action Plan

In April of 2010, reflective of eHealth Infostructure's strong emergence of the past several years as a priority, FNIHB approved the Health Infostructure Strategic Action Plan (HISAP). The HISAP provides the road map for the eHIP and all other program electronic investments along with FNIHB information/health information management activities and lays out a long-term strategic framework.

The HISAP is centred on four key goals:

1. An electronic health record capacity and capability for all First Nations people by 2020;
2. Seamless integration of First Nations Infostructures with provincial Electronic Health Records (EHRs) systems;
3. Meaningful, standardized information for decision support available to First Nations, Regions and FNIHB; and
4. Collaborative and sustainable partnerships between First Nations, provinces and the federal government.

The eHIP framework and guidelines set the parameters by which the HISAP can be achieved and illustrates alignment areas among ongoing FNIHB, provincial, non-governmental and First Nations activities in the health ICT context. As well, it articulates ways this mutually supportive work can be capitalized on to achieve program goals. Figure 1 provides a pictorial representation of the HISAP and its components.

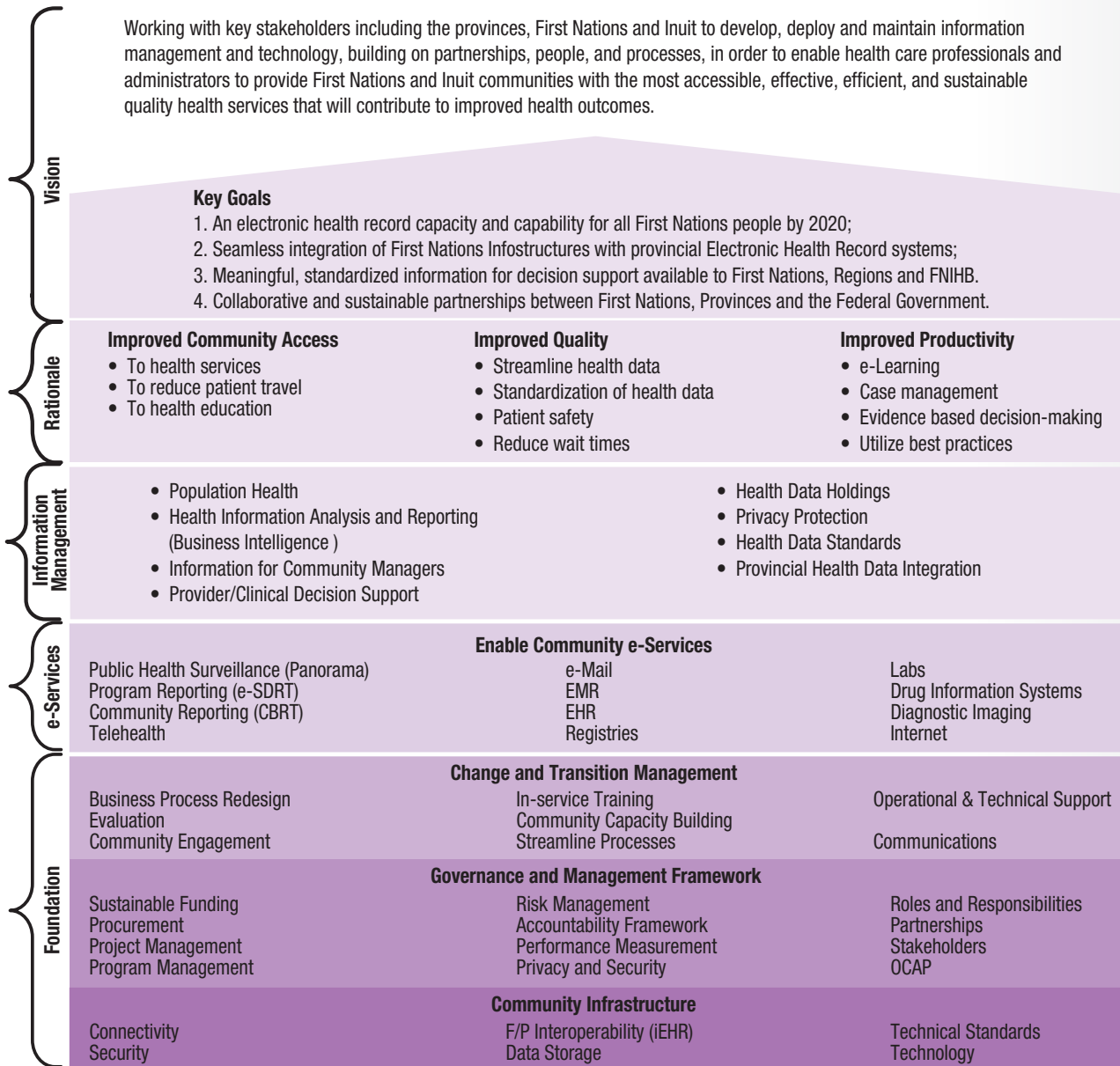
1.6 Guiding Principles

The eHIP is based on the following principles:

- First Nations will have meaningful opportunities to directly participate and determine how the eHealth Infostructure elements are to be used in their communities, including a collaborative role in the design, planning and delivery of eHealth services and solutions;
- First Nations communities require comparable access to eHealth services to the general Canadian population;
- Facilitation of seamless access to services through alignment, integration and adoption, as appropriate, with federal/provincial/First Nations eHealth service delivery tools and networks;
- Client focused and program targeted;
- Innovative and flexible;
- Holistic and respectful;
- Standards based and interoperable;
- Sustainable; and
- Evaluated.

Figure 1. Health Canada – First Nations and Inuit Health Branch eHealth Infostructure Strategic Framework

May 2010



1.7 Linkage of eHIP to Information as a Strategic Asset

With the process of transfer of health responsibilities and administration to First Nations control, the FNIHB role in First Nations healthcare is becoming more a function of information management, reporting and accountability, and policy development. The HQ Branch directorates and regional offices continue to strategically position activities to support more trilateral aligned/integrated service delivery and evidence-based decision making about the health of First Nations.

As the eHIP progresses on enabling connectivity, point-of-service systems and integration with the provincial EHRs, it will provide the tools to assist FNIHB and First Nations to align program information requirements internally and to leverage innovation and integrated services to improve due to the new analytical power and business intelligence data available.

Whether gathered from various electronic applications at the community, regional or national levels, accurate, timely and relevant health information is essential for: planning and implementing health policy and programs; informed decision making; integration of information that can be passed on to individuals and communities to help them protect, improve and maintain their health; research studies; and detection of unusual events, epidemics, or other health changes.

2.0 eHealth Infostructure Program Elements

The eHIP supports the use of health technology to enable First Nations and Inuit community front line healthcare providers to improve people's health through innovative partnerships, technologies, tools and services. It focuses on the adoption of modern systems of ICTs for the purpose of defining, collecting, communicating, managing, disseminating and using data to enable better access, quality and productivity in the health and health care of First Nations. The program evolved out of the need for FNIHB to align with First Nations' eHealth strategies, health plans and policy directions, as well as the movement by provinces/territories and the health industry towards increased use of information and communication technologies to support health service delivery and public health surveillance. Moreover, eHealth Infostructure (information + systems + technology + people) has the benefit of modernizing, transforming and sustaining health care to provide: optimal health services delivery; optimal health surveillance; effective health reporting, planning and decision making; and integration/compatibility with other health services delivery.

In order to achieve its mandate and goals, the eHIP is focused on three principal areas of activity:

- Building the **Foundation** components that reflect the base requirements of the eHIP, without which eServices will not operate;
- Implementing **eServices** that reflect the key application component areas; and
- **Supportive** services that provide good governance and management of the eHIP.

2.1 *Foundation Elements*

2.1.1 **Broadband Connectivity**

An adequate level of broadband is the basic foundation for all eHealth Infostructure services, programs, applications and strategies. Without sufficient and sustained connectivity, community health ICT systems cannot be implemented. The goal of the connectivity element is to connect all on-reserve health facilities to either broadband or high speed Internet services (the amount of bandwidth required is determined by the types of activities carried out on-reserve). Currently 75% of all facilities have access to either broadband or high speed Internet.

Included in the connectivity element are the activities related to the connection of the health facility to a central broadband/Internet point within the community, which is further connected to external existing networks. Also included is the maintenance of the connectivity and costs associated within the health facility to maintain the connectivity.

The eHIP supports:

- Connectivity installation at the health facility (from community point of presence);
- External network services including bridging, security and quality of service;
- Operations and support (including helpdesk);
- Telecommunications equipment inclusive of bridges, switches, routers, servers, etc;
- Monthly connectivity charges; and
- Evergreening of connectivity equipment.

Strategic Directions

Short Term (1 year):

- Continue to sustain existing community connectivity infrastructure;
- Identify the gaps in community connectivity;
- Clarify the investments needed to address identified gaps; and
- Further define Aboriginal Affairs and Northern Development Canada (AANDC) and Health Canada roles and responsibilities and better coordinate strategies within the connectivity context.

Medium Term (2-5 years):

- Build community capacity to use and maintain connectivity infrastructure;
- Establish a connectivity framework expanding on the HISAP tying together the goals and expectations of First Nations communities, FNIHB, AANDC and provincial governments; and
- Seek sustained and stable financial resources to support connectivity, with emphasis placed on partnerships among federal departments, provincial governments and private industry (“P3 partnerships”).

Long Term (5 years and beyond):

- Once a framework and resources are in place, begin formally transferring responsibility for connectivity planning, sustainability and upgrades to communities/organizations by explicitly including connectivity/IT requirements in transfer contribution agreement health plans.

2.1.2 Information Technology and Operations

Much like adequate connectivity, IT equipment or the technology platform and support is needed as a foundational element in the delivery of modernized health services. Without the proper equipment, skilled human resources, and effective management the innovative eHealth solutions will fail to meet the needs of local health service providers. Internet-based solutions for remote locations require a consistent, secure exchange of information in order for communities to acquire these tools. If an adequate bandwidth platform and access to the Internet cannot be managed, the potential of an Internet-based solution is either undermined or simply not feasible.

This element of the eHIP supports the purchase and implementation of the IT infrastructure and works with First Nations and Inuit to harmonize community IT policy, support strategies, and leverage approaches and resources for efficient community level IT services support. Capacity development and support around information and

communications technology management at the community level is a longer term investment in time and resources and this will be coordinated with other key federal departments, especially AANDC, who share similar community ICT support challenges.

To function effectively, community level operational support service requires: harmonized service level agreements; an Internet or email usage policy; data protection protocols consistent with data-sharing agreements; technical support and ever-greening directives; surplus IT equipment and disposal directives; archiving directives; and software management policies.

This program element is also indirectly involved in the complex area of community information management by supporting the local tools, the training on how to use them effectively and ensuring the physical infrastructure is available to help keep data and information safe.

To that end, the eHIP will support:

- Hardware inclusive of desktops, laptops, and peripherals;
- Medical peripherals for Telehealth services;
- Evergreening of eHealth equipment;
- Operations and support;
- Approved software inclusive of licenses and maintenance;
- Negotiation and development of Service Level Agreements;
- Negotiation and development of data/information sharing agreements;
- Mentoring and training opportunities; and
- The sharing or development of best practices, policy and process documentation.

Strategic Directions

Short Term (1 year):

- Continue to provide funding to sustain existing IT equipment/technology platforms;
- Identify the gaps in required IT equipment;
- Clarify the investments needed to address identified gaps;
- Further define roles and responsibilities within the department on support for on-reserve IT/IM (e.g., Information Management Service Directorate (IMSD), Business Planning and Management Directorate (BPMD), FNIHB, etc.); and
- Develop regional evergreen plans incorporating both needs and funding implications.

Medium Term (2-5 years):

- Build community capacity to use and maintain IT equipment and IM processes;
- Examine ways to stabilize ongoing IT funding; and
- Establish an IT framework clearly linking corporate and on-reserve IT directives and setting forth roles and responsibilities of the various areas involved in IT within Health Canada.

Long Term (5 years and beyond):

- Begin transferring responsibility for IT planning, sustainability and upgrades to First Nations, where possible.

2.1.3 Program/Project Management, Planning and Accountability

This program element includes the development, support and implementation of effective project management practices including, but not limited to, appropriate and effective resource and activity monitoring and control systems; risk management; change management; project reporting mechanisms; and effective financial and project planning. The key expected results from this program element are:

- Greater clarity and understanding regarding federal/provincial/First Nations roles and responsibilities;
- Trilateral data sharing and storage agreements;
- Increased sharing of eHealth best practices; and
- Increased exploration of various First Nations capacity building leadership models.

Key elements in this strategy include:

- Use of accepted standards, methodologies and best practices for management and monitoring that are responsive, timely, action oriented, accountable, effective and efficient;
- Use of simplified planning and project gating approaches for all eHealth Infostructure projects that are outcome and delivery oriented and seen as an aid to successful project delivery;
- Alignment with Canadian health informatics standards;
- Leverage of and participation with the *Infoway Standards Collaborative*;
- Identification of the interoperability requirements to be followed in all projects;
- Identification of the necessary standards expected to be included in projects, including information standards, functional requirement standards and where appropriate with and for a particular province product standards; and
- Definition of clear accountability roles and responsibilities for all partners.

2.1.4 Capacity Building

eHIP capacity building is conducted in three main areas: human resources, infrastructure and governance.

The eHIP assists with coordinating certain eHealth related training to health professionals working in on-reserve First Nations communities, community-based health workers, and administrative and support staff on information and communications technologies use and maintenance.

Infrastructure capacity is built through efforts to improve the Internet connectivity of remote and isolated communities and ensure adequate information and communication technology equipment is available.

Measuring readiness for eHealth activities is an important step in building capacity. Readiness is defined as the state of availability and preparedness for service, action, and use. It compares the current state of being ready for a group of First Nations communities to what is required for their target implementation of selected eHealth components of the HISAP.

An *eHealth Readiness Assessment Model* has been developed and tested with a select number of tribal councils. It has been designed for groups of First Nations communities who come together to work on a shared eHealth Infostructure. The model will help the groups of communities evaluate their current level of readiness against a range of measures and help them plan their next steps in developing their Infostructures over the coming years.

By supporting needs and readiness assessments, change management strategies, and new information/information technology management structures, governance capacity is increased and ensures that appropriate eHealth Infostructure governance mechanisms are in place. This in turn facilitates both the adoption of new health technologies and their effective use once implemented.

2.2 eServices

2.2.1 Telehealth

Telehealth technologies can extend both primary and specialist health services as well as health promotion and disease prevention education to under-served areas particularly in remote and rural areas. Telehealth services and processes allow providers and patients to collapse the barriers of distance and time; no longer are location, climate and isolation limiting factors. With access to these supports and information, providers and patients can make informed treatment and care decisions; and where appropriate, be spared travel time and costs to access remotely-located medical assistance. Examples of Telehealth services include: tele-visitation for family members; tele-education for workers and community members; and remote clinical consultations for health issues such as diabetes and mental health.

Telehealth provides access to key services within established provincial and territorial Telehealth networks by forming partnerships for integrated service delivery and cost support. Telehealth services must be responsive, flexible, accessible, and cost effective for communities. This includes providing effective supports and tools for service delivery professionals and community members to establish long-term sustainable funding for Telehealth infrastructures and service delivery programs.

Deploying Telehealth services to communities requires complex planning, implementation and co-ordination among diverse and multi-level organizations. Telehealth implementation respects the protocols of communities' health care facilities and standards of medical practice. Telehealth services and technologies recognize and respond to First Nations and Inuit cultural values.

Detailed regional guidelines are developed in conjunction with each province and First Nations and Inuit to cover such areas as: maintaining Telehealth etiquette and procedures; Telehealth privacy; Telehealth recording events (consent-copyright-broadcast rights); Telehealth booking and scheduling (particularly cancellation policy); rules around Telehealth participation in the provincial Telehealth systems and services; and Telehealth payments (who pays for connection/bridging costs, what videoconference (VC) units can be used for in Tribal Councils/Health Centers), etc.

The eHIP Telehealth element:

- Procures appropriate videoconference/equipment solution to suit the identified needs of the site and install and certify the equipment (Technical and Site Certification Process);
- Designs and initiates the workflow process that will facilitate integration of the Telehealth solution into regular service delivery;

- Ensures staff are trained in use of the video conferencing equipment, the scheduling system and understand the standards and procedures related to usage; and
- Facilitates change management.

Strategic Directions

Telehealth strategic directions include:

- Maximizing Telehealth's demonstrated potential to improve access to specialized services not available within First Nations communities;
- Integrating Telehealth with the deployment of new chronic care disease delivery models;
- Targeting Telehealth to strengthen and modernize rehabilitation services;
- Leveraging Telehealth to empower consumers by enhancing access to patient education and wellness promotion activities in the region;
- Working with First Nations and Inuit, provinces and private vendors to identify Telehealth technologies and practices which can be shared and provide the greatest levels of benefits;
- Developing pilot projects with provinces, First Nations and Inuit and private sector to test and verify Telehealth technologies offering the greatest potential; and
- Furthering Telehealth deployment and technological development to include supporting emergency medical services and supplementing primary health care delivery in remote locations.

Short Term (1 year):

- Develop a multi-program e-learning/distance learning business case and strategy for the Branch on how to leverage eHealth investments at the community level.

Medium Term (2-5 years):

- Deploy e-learning programs in at least three major program areas such as i.e. nursing, maternal child, home care;
- Continue to negotiate for more integrated clinical Telehealth services with all provinces where community Telehealth sites exist and as new ones are deployed; and
- Deploy more Telehealth sites with the inclusion of store and forward and mHealth (mobile) solutions.

2.2.2 Public Health Surveillance

A Public Health Information System strategy for FNIHB was approved by FNIHB Senior Management in April 2005 formalizing FNIHB's approach of aligning national and regional health information systems with those being implemented in provinces. This includes, but is not confined to, the rollout of the Pan-Canadian public health surveillance system known as *Panorama*.

Panorama is an electronic public health surveillance and case management system that is designed to enhance the ability of public health professionals to work within and across multi-disciplinary teams, regions, provinces and territories. *Panorama* components were developed to: improve health outcomes related to communicable disease; identify, investigate and manage communicable disease outbreaks; manage immunization programs efficiently; communicate important public health information related to communicable diseases through alerts and notifications; and facilitate research and analysis to support preparedness for future communicable disease outbreaks and risks to health related to communicable diseases.

The goal of the Branch is to work towards the implementation of eHealth tools that ensure adequate public health surveillance for First Nations and Inuit across the country and that is comparable to public health surveillance in place for other Canadians. FNIHB supports the implementation of *Panorama* as the preferred public health system or any another provincially selected tool.

The following principles guide the implementation of *Panorama*:

- The approach is to integrate with the provincial *Panorama* or other preferred public health system implementation and to utilize *Panorama* or other preferred public health system as a public health tool to guide public health activities in a timely fashion;
- FNIHB will not implement its own instance of *Panorama* at the national or regional levels; and
- Other public health applications will only be considered for funding if they are being aligned with or implemented in provinces, as part of the provincial public health information system implementations.
- Planning and implementation of *Panorama* utilizes a decentralized approach whereby Regions and First Nations and Inuit will work closely together and collaboratively with the provinces to leverage *Infoway* investments. The FNIHB Regions are not directly eligible for *Infoway* funding.
- Engagement with First Nations and Inuit communities and leaders is sought throughout this process as part of this strategic direction to ensure community concerns are addressed.
 - First Nations and Inuit engagement is a regional responsibility within the overall integration strategy for joint implementation planning;
 - Each region will identify a First Nations and Inuit representative on their *Panorama* planning team and on a region-by-region basis will collaboratively define specific roles and responsibilities; and
 - National Office will address matters impacting all Regions in the deployment and maintenance of *Panorama*.
- Where First Nations and Inuit Health Information Systems (FNIHIS) is being used, it will continue to be maintained until such time as *Panorama*, or other public health system, is implemented as per the joint jurisdictional rollout plans.
- Access to First Nations and Inuit health data in a specific jurisdiction will be obtained through signed trilateral data sharing agreements between FNIHB, the province or territory, and authorized First Nations and Inuit entity.

The eHIP will fund such items as:

- Information technology and training (access to network, hardware, user training, technical support, various software tools as required); and
- Project management and change management costs.

Strategic Directions

Short Term (1 year):

- Detailed trilateral integrated plans for the early adopter provinces; and
- Shared trilateral resources for First Nations deployment into communities.

Medium Term (2-5 years):

- Develop and implement *Panorama* Change Management and capacity building plans, including transition to First Nations and Inuit communities;
- Full deployment and maintenance;
- Migration away from legacy system known as FNIHIS based on evaluations and where, and if applicable, migration of data/information relevant for incorporation into *Panorama*; and
- Address and work with First Nations and Inuit and provinces to ensure that the key issue of privacy is understood and agreed upon, in terms of *Panorama* requirements including meeting public health standards/provisions.

2.2.3 Electronic Medical Records (EMRs) and Electronic Health Records (EHRs)

Over the next ten years, Canada's EHRs will be a secure and comprehensive electronic record of a person's critical health history that can be accessed and shared by authorized health care providers—doctors, nurses, lab technicians, and so on—in the community, province or territory, and eventually across the country.

Infoway describes the benefits as:

- **Improved emergency room visits:** Having instant access to a patient's health information will reduce the chance of misdiagnosis and possible unforeseen complications in the ER;
- **Support for patients with chronic conditions:** For Canadians living with chronic illnesses, EHRs can make monitoring and reporting day-to-day risk factors much easier for patients and physicians;
- **Reduced wait times:** Adopting EHRs will help patients take advantage of cancelled appointments and create shorter wait times;
- **Support for patients in remote areas:** EHRs could enable a patient to see a local physician who could then transfer test results to a facility in an urban centre;
- **Fewer duplicate tests:** Access to previous test results and medical tests will mean avoiding unnecessary tests; and
- **Better diagnosis:** EHRs can help Canadians receive better diagnoses because they will paint a more comprehensive picture of a patient's health history.

An EMR system provides physicians and their patient care team, including nurses and office support staff, with electronic access to vital patient health information, decision support, billing and office administration tools. An EMR system captures and records patient health information in an electronic format. All medical information sent to a physician's office (such as lab results, images, consultant or hospital notes) are incorporated into the EMR to give a complete picture of a patient's health condition.

Infoway is co-investing with the provinces and territories to support their efforts to significantly increase the number of clinicians adopting and using an electronic medical record (EMR) system. The funding is directed at:

- Supporting jurisdictions and community based physicians and nurse practitioners to implement, adopt and use EMRs in physicians' offices, primary care centres and out-patient clinics;
- Upgrading and connecting EMRs so they are interoperable with the jurisdiction's EHR system; and
- Helping clinicians achieve increased clinical value through the advanced use of EMRs, such as accessing more complete medication profiles, lab results history, immunization reports and hospital discharge summaries.

FNIHB recognizes that health professionals need to be supported by community-based health information tools and systems, adapted to and reflective of local circumstances, which facilitate communication and patient care among all health providers in the community setting. **It is also recognized that such tools and systems may be used to facilitate implementation of provincially-approved EMRs in communities.**

The FNIHB Regions will work with First Nations and Inuit to address privacy concerns and will seek to meet the principles of ownership, control, access and possession (OCAP) where applicable, while ensuring that all provincial and federal legislative requirements are satisfied. At the community level, the use of the EMR will be based on the community's health needs assessment and local health management priorities.

Besides case management of patients, community data collection must support population health activities, including health promotion and surveillance, program monitoring, performance measurement and accountability functions.

To that end, the eHIP will fund such items as:

- Information technology and training (access to network, hardware, user training, technical support, various software tools as required);
- Project management and change management; and
- Identification and support of innovative approaches, best practices, that enhance broader system alignment/ interoperability and functioning; encourage knowledge transfer, knowledge exchange; the creation of community networks and community mentoring to support capacity building.

Strategic Directions

Short Term (1 year):

- To the extent possible within existing resource levels and provincial/federal contexts, continue to work with the FNIHB Regions, First Nations leadership and other stakeholders on activities and strategies designed to facilitate the implementation of EMRs on-reserve and engagement in provincial strategies.

Medium Term (2-5 years):

- Continue to seek new funding and strategic partnership opportunities with Infoway, provinces, other government departments and federal entities, non-governmental organizations, and First Nations leadership to further improve the development and implementation of EMRs in First Nations communities, as well as their integration across communities and into provincial systems; and
- Begin deployment of provincially-approved EMRs in on-reserve communities.

Long Term (5 years and beyond):

- Fully deploy EMRs in on-reserve communities, where required, and link them to provincial EHRs by 2020.

2.2.4 Client Registries

As defined by *Infoway*, a client registry is “essentially a ‘White Pages’ providing accurate patient identification to ensure the right health records are associated with the right patient.” In other words, a client registry identifies all clients and their basic personal information (name, birth date, address, etc.) as the foundation on which to

build future eHealth Infostructure services such as EMRs and *Panorama* or its jurisdictional equivalent. Without an accurate list of First Nations people accessing provincial and/or on-reserve health systems, the establishment of comprehensive and accurate health information systems respectful of privacy would be critically undermined.

A First Nations client registry is an important first step in creating the Infostructure within which First Nations can participate in, and realize the benefits of, Pan-Canadian EHRs initiatives while providing First Nations control over First Nations information. This information will help to inform better clinical, management and policy decisions in order to improve First Nations health outcomes.

FNIHB supports development of First Nations client registries that serve First Nations community needs and are secure, accurate, and facilitate implementation of eHealth Infostructure components such as EMRs and *Panorama* (or its jurisdictional equivalent). Registries, whether created as distinct First Nations databases or by using First Nations identifiers within provincial registries, must be fully integrated with provincial systems and be able to aggregate First Nations health data at a provincial/regional level. Provincial governments are the authority for developing health systems in their respective jurisdictions, and thus will have the final say as to how provincial registries roll out and how First Nations are reflected within provincial systems. However, as First Nations and Inuit are pursuing various and different types of client registries both within Regions and across provincial boundaries, there is a need for coordination activities to ensure interoperability requirements and benefits from synergies.

FNIHB will work with First Nations and Inuit to address privacy concerns and will seek to meet the principles of OCAP where applicable, while ensuring that all provincial and federal legislative requirements are satisfied.

The eHIP will support such items as:

- Information technology and training (access to network, hardware, user training, technical support, various software tools as required); and
- Project and change management.

Strategic Directions

Short Term (1 year):

- Build upon phase 0 and phase 1 client registry pilots conducted in 2008-09 and 2009-10 by the Assembly of First Nations (AFN) and Sierra Systems in File Hills Qu'Appelle Tribal Council (Saskatchewan), Four Arrows Regional Health Authority (Manitoba), and the Kenora Chiefs Advisory (Ontario). This includes seeking to address outstanding legal, privacy and policy issues relating to the pilots and applying these solutions to future national level activities;
- Continue work in the FNIHB Regions to complete phase 0 projects within available resources. This includes a phase 0 project launched in 2010-11 in the Quebec Region in partnership with Sierra Systems;
- Work with key partners such as the AFN, *Infoway*, AANDC, provincial governments, and others to clarify the functions of registries (i.e., type of data contained within them; uses for registries outside of health; links to other lists such as the AANDC Indian Registry); and
- Once the functions have been clarified, work with key partners and others toward a common policy on the form of registries. Specifically, whether they are to be stand alone systems managed exclusively by First Nations, whether they are to be constructed using identifiers within provincial registries, and whether different systems can be used in different jurisdictions.

Medium Term (2-5 years):

- Finalize work to address legal, privacy, policy and technical issues;
- Secure a sustained source of funding; and
- Complete implementation.

Long Term (5 years and beyond):

- Ensure a stable and well-functioning First Nations client registry system, fully linked to provincial systems, which act as an effective foundation for EMRs and other health applications.

2.3 Supportive Elements

2.3.1 Governance

The work of the eHIP is overseen by the **eHealth Infostructure Advisory Committee (eHIAC)** which provides strategic oversight, direction and guidance to the eHIP at both the national and regional levels. eHIAC will ensure that eHealth activities conducted throughout the Branch are consistent with the eHealth Infostructure Strategic Framework, the Health Infostructure Strategic Action Plan, and are linked to Branch strategic outcomes. Specifically, the eHIAC:

- Provides advice and recommendations on key national eHIP and policy directions;
- Provides oversight of the eHealth national evaluation;
- Reviews and advises on national change management and adoption strategies;
- Reviews and approves national funding approaches;
- Reviews and provides advice on eHealth Infostructure projects of national importance; and
- Provides advice on regional governance and integration models, planning approaches, processes and projects to ensure they are aligned with the national direction.

The eHIAC will not approve or manage individual national projects nor participate in decisions that are specific to a region, unless a region seeks a national perspective.

Regional eHealth governance models differ for service delivery and data collection. The tripartite model (formally based on broader objectives) in British Columbia is the most dynamic and large scale governance in place, with eHealth as one major component of a broader health system change effort. Trilateral eHealth specific models in other Regions are generally smaller in scale, less formal and more operationally focused.

Success in regional eHealth governance will include the development of a mid to long term (community generated/community based) regional strategic/action plan for eHealth Infostructure. Once supported by all three trilateral partners, this will greatly assist in understanding the 'big picture' of the various jurisdictional regional eHealth activities. The Action Plan will show how each eHealth activity is linked towards developing the final desired state of the transformed First Nations health system and move the partners away from the present approach of one-off/project based mentality, to a more integrated and long term approach.

Key elements in tripartite and trilateral eHealth include:

- Structures that are supportive and linked to federal, provincial, regional, tribal organization and local community governance;
- Enabled engagement with any and all “groupings of community” structures;
- Governance structures that are enabled, pragmatic and straight-forward (not overhead);
- Built on the existing and transitional frameworks that are in use today to ensure continued front line service delivery, information resources, a community based health and health care delivery system and an enabling infrastructure;
- Representation and leadership sought through existing organized governance structure(s) (i.e. Tribal Council, Tribal Health Authority, etc.); and
- Accountabilities identified within a strong framework respecting all roles, responsibilities and traditions.

2.3.2 Partnerships

2.3.2.1 Canada Health Infoway

Launched in 2001, *Infoway* invests with public sector partners across Canada to develop and implement the EHR and its nine strategic components. *Infoway* is an independent, not-for-profit organization whose members are Canada’s fourteen federal, provincial and territorial Deputy Ministers of Health. *Infoway* is a strategic investor that works in partnership with provincial/territorial health ministries, regional health authorities, other healthcare organizations and information system vendors to best align their investments with jurisdictional plans and to leverage existing solutions. It has set the standards for the implementation of the EHR in Canada. As such, FNIHB’s eHIP collaborates with *Infoway* to ensure that national standards are met.

2.3.2.2 Other Federal Departments

Health Canada (FNIHB), AANDC and Industry Canada share a desire to see all First Nations and Inuit communities become connected to broadband internet services and establish information management and technology capacity, in order for departments and communities to better:

- Provide on-line services;
- Streamline, integrate and co-share respective program data; and
- Increase capacity by providing on-line professional development for health care workers, band offices, governance officials, as well as educators and economic development officials.

Working to ensure that First Nations and Inuit communities become connected is a necessary condition for improved service delivery and professional capacity development, but it is not an end in itself. AANDC, FNIHB and First Nations and Inuit communities share a vision that these new electronic tools will ultimately enable significant federal, provincial, territorial, First Nations and Inuit partnerships in key social and economic delivery areas, such as health, education and economic development.

In looking to address the shortage of community human resources with the necessary range of ICT skills, FNIHB has begun work with Human Resources and Skills Development Canada (HRSDC) and AANDC to explore potential partnerships with the department’s programs and strategies. This includes work with sector councils such as the Information and Communications Technology Sector Council.

2.3.2.3 Provincial Ministries of Health

The goal of the eHIP is to have integrated Regional/First Nations information systems linked with provincial healthcare systems for efficiency, safety, cost containment, and better access to services and more responsive health policies and programs. It is about providing the health care professionals with the right information, about the right clients and population, at the right time, in an integrated fashion.

The eHIP focuses on:

- The establishment of regional governance structures for eHealth Infostructure activities;
- The development and implementation, in collaboration with provincial health departments and First Nations and Inuit, integrated and comprehensive plans around eHealth Infostructure and public health surveillance activities; and
- Improved linkages between on and off-reserve health information systems, for effective health planning and programming.

2.3.2.4 First Nations and Inuit Organizations and Communities

For the past several years, the AFN, First Nations and Inuit communities and FNIHB (National Office and Regions) have worked on ensuring that they are aware of each others goals and directions and of planned work in eHealth Infostructure areas. Health Canada continues to support AFN nationally and regional First Nations organizations, to develop eHealth policy and strategic directions that complement the needs of the communities and facilitates the alignment and integration with the federal and provincial governments.

2.3.2.5 Health Canada

The Health Information, Analysis and Research Division (HIARD) of FNIHB is a key partner on issues of health information management and health research at FNIHB Headquarters. As a centre of excellence for health surveillance, information, analysis and evaluation within the Branch, HIARD is accountable for the management and delivery of quantitative and qualitative information including data development, data analysis and research evidence, as well as guiding data development in directions which will support policy and planning analysis. In this role, they provide guidance and advice on use of health information and research activities originating from ICTs such as *Panorama* and EMRs. HIARD does not provide funding to regional offices nor do they have access to information in provincial systems.

Health ICTs without programs and people using them achieve nothing in and of themselves. Given this, the eHIP works very closely with other directorates and areas in the Branch to ensure the systems that are deployed further First Nations and Inuit health program objectives, move programs closer to achieving the Branch mandate, and ensure continued integration with provinces.

The eHIP also partners with the areas of the Branch and department responsible for corporate information technology and enterprise architecture planning. These areas, particularly the IMSD, are responsible for: developing, implementing and communicating corporate IM/IT policies, standards and guidelines; facilitating the planning and delivery of corporate IM/IT projects; and providing coordination and secretariat support to departmental and Branch IM/IT committees. Within this context, the eHIP works towards the alignment of internal corporate and external (i.e., on-reserve) IM/IT policies, linking internal and external technologies, sharing IM/IT expertise, and reflecting First Nations and Regional business needs in corporate IM/IT policies.

3.0 Roles and Responsibilities

3.1 National and Regional Roles

Health Canada has overall responsibility for the development and implementation of the eHIP and ensuring that funding is appropriately allocated and spent according to established criteria and guidelines. Ensuring necessary engagement of partners in the process and adherence to government procedures, reporting and accountability requirements are also Health Canada responsibilities. The implementation of the eHIP is a shared responsibility between the national office of FNIHB and the seven regional offices.

The FNIHB national office sets the strategic program policy framework and direction. The national office then funds the regional offices as the service delivery arm of the program. The regional teams either directly engage in eHealth related operations or fund and manage the financial arrangements with First Nations and Inuit communities and regional organizations to meet project deliverables. In addition, some national office funds are used to support targeted projects with a national scope designed to examine innovations for possible application to national programming. The program consists of a number of regional and national-level activities and strategies that continue to evolve. Development, implementation and monitoring of these activities and strategies means national and regional offices must be able to assume a range of roles and responsibilities including:

National Office responsibilities include:

- Set strategic directions for the overall Program;
- Set national level policies for the Program;
- Provide regional offices with funding/approval of regional program plans;
- Act as the focal point for regional collaboration;
- Support innovation and monitor national/international trends in eHealth;
- Act as national liaison with external stakeholders, private sector, other government departments;
- Support senior management on questions related to eHealth; and
- Advocate for increased deployment of eHealth and its sustainability.

Regional Office responsibilities include:

- Change management leader;
- Regional funder/approver of community level projects;
- Capacity building partner;
- Transition/integration facilitator;
- Implementer/project lead;
- Partnership developer (First Nations and Inuit and provincial);
- Technical advisor/supporter of community daily operations; and
- Direct operations.

3.2 eHIP Funding

The following table provides an overview of eHIP funding from 2008-09 to 2012-13. All funding, with the exception of A-base funding is scheduled to sunset at the end of 2012-13.

Year	2008-09	2009-10	2010-11	2011-12	2012-13	Total
eHealth Infostructure Planning* Assessment	1.26	2.92	3.00	0.50	0.50	8.18
<i>Panorama</i> *	5.80	8.46	9.69	7.95	17.32	49.22
Manitoba Tele-radiology*	0.80					0.80
Telehealth and Connectivity Sustainment *		6.00	6.00	6.00	6.00	24.00
eHealth A-Base (FNIHIS)	4.60	4.60	4.60	4.60	4.60	23.00
TOTAL	12.46	21.98	23.29	19.05	28.42	105.2

* Sunset funding

4.0 Benefits, Outcomes and Medium-Long Term Expectations of eHIP

In the short to medium term, the eHIP continues to have as its investment goals to act as the enabler of innovation and transformational change within the broader First Nations and Inuit health system. These benefits include:

For Health Providers:

- Remote professional support (including education), facilitating the recruitment and retention of nurses and physicians;
- Improved care by enabling access to remote consultations/specialists, health information and continuing education;
- Improved wait times for diagnostic imaging services;
- Decreased adverse drug events, prescription errors and improved prescribing practice;
- Increased speed and accuracy in detecting infectious disease outbreaks;
- Reduced duplicate medical tests;
- Improved information management leading to better planning, useful data and reduced costs; and
- Increased emergency support and reduced emergency situations due to improved prevention and follow-up care/monitoring.

For Individuals/Communities:

- Improved community access to care and the quality of care leading to reduced stress on families (i.e. parents not having to leave the community for a medical consultation);
- Improved health outcomes due to more time dedicated to follow-ups and greater access to diagnostic and preventive services;
- Reduced patient travel time and cost to access services;
- Increased patient access and use of their health record;
- Community economic development (i.e. through the employment of local technical expertise);
- Enhanced trust in health services due to improved access to professional support;
- Reduced anxiety and fatigue of the patient due to more rapid and reliable diagnosis;
- Improved patient compliance with prescribed treatments;
- Opportunities to participate in prevention/community health activities and to learn from community/personal health information; and
- Opportunities for tele-visits of hospitalized family members.

The Future for First Nations eHealth Infostructure

The eHIP has as its long term goals:

- Health professionals at the community, regional and national levels will have a range of clinical and program support tools including integrated client medical records;
- Health statistics and surveillance data will be accessible and integrated with case management/client record applications for chronic diseases, injury and social determinants. This information will support the capacity development of communities and government partners to generate and to share quality surveillance data. Federal government will continue to work with provincial governments to facilitate data linkage agreements, in order to improve health surveillance on population health;
- Telehealth tools and accredited processes will be deployed for the delivery of diagnosis, treatment, monitoring, and referrals in order to provide access to more timely, proactive and sustained treatments thereby reducing family and community disruption through the delivery of in-community services;
- An integrated and interoperable regional eHealth Infostructure that will respect privacy, support strategic and operational planning, include the development of policy, consider threat risk assessments for systems and enhance decision making and accountability. Some knowledge will be developed through web-based support;
- eHealth will be focused on the sharing of appropriate common health data both from an intra and inter jurisdictional perspective. Finally, it will support data sharing amongst the various levels of governments;
- Technology will enable and support the balance between the administration of health services (e.g., streamlining data entry) and the delivery of those services;
- Business processes and procedures will support more efficient and effective government-wide service delivery, meet confidentiality, privacy, accountability and reporting requirements and reduce the burden on communities, regions and practitioners;
- Using e-tools and services (e.g., Internet) will enhance public access to reliable health information which promotes individual, family and community ownership for health promotion, disease and injury prevention. These tools must be designed and developed in partnerships with community end-users to ensure local adoption. They will allow for sustained capacity development, quality health statistics and data, as well as evidence based decision making;
- Presently, most community data resides in local pockets in various software applications and storage modalities, but the future will require that this moves towards an eHealth Infostructure that will be interoperable and driven by the overarching need for information sharing;
- The eHealth investment choices must be standards-based, which will include data, infrastructure, application and strictly defined access, sharing and usage standards. It will be aligned with emerging federal and provincial government enterprise health architecture plans;
- An integrated and coordinated approach will provide support towards broadband connectivity internet access for all communities, along with the technical support to maintain and install new technologies and applications. Helping to develop and strengthen technical capacity will ensure that ICTs are appropriate to meet current and future client needs, build human capacity, and ensure that the users can strengthen and sustain their technological capabilities; and
- Effective national and regional governance structures that sustain and support eHealth Infostructure activities is integral to deciding which technologies are appropriate for communities and how those technologies will be used within a community. Opportunities exist to improve coordination of eHealth policies, strategies, activities, and/or projects across multiple program and policy areas. eHealth related initiatives are frequently

undertaken as time-limited, stand-alone or program-specific actions without maximizing government wide benefits. Through more coordinated policy development and investments, economies of scale and increased program efficiencies can be achieved. In the longer term, this leads to increased access to better health programs and, ultimately, improved health outcomes.

There are two new and emerging major areas of potential impact that need to be monitored closely. The Personal Health Record (PHR) is an online health record that is initiated and maintained by an individual patient. Web-based services are being launched that promise to help patients track treatments, medications and appointments. They could also help to manage chronic diseases. Ideally, these services could be linked to a provincial healthcare system, creating a more complete health record. PHRs may be the method patients have been waiting for to engage with their health care providers and to be informed about their options in controlling how the health system makes use of their EHR.

The second emerging area of interest is mHealth, which is a recent term for medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, PDAs, and other wireless devices. mHealth applications include the use of mobile devices in collecting community and clinical health data, delivery of healthcare information to practitioners, researchers, and patients, real-time monitoring of patient vital signs, and direct provision of care (via mobile telemedicine).

In summary, by the year 2020, it can be expected that within the First Nations broader health system that professional healthcare provisions and practice, accountability and administration of health programs and access to one's own health information will feature:

- Widespread use of electronic tools for public health, primary/community care;
- Seamless program reporting and evaluation (e-reporting);
- More efficient use of technology for improved access to healthcare (Telehealth and mHealth);
- Integrated and interoperable client health records with each individual consumer having access to their own personal health information electronically when they want it (EMR/EHR/PHR);
- Comprehensive surveillance and case management for communicable diseases and outbreak management; and
- Quality health information/statistics to support program delivery, planning and decision making.

