

# eHealth | Quarterly Status Report April – June, 2010

Reporting on the implementation of electronic medical record systems in physician offices, the expansion of telehealth services and the development of a provincial electronic health record solution













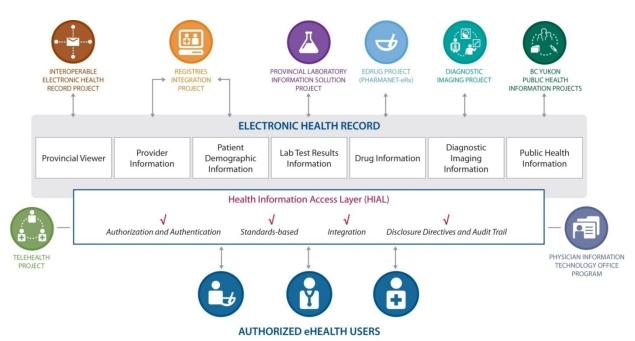


# eHealth | About the Quarterly Status Report

The eHealth Quarterly Status Report fulfils a Ministry of Health Services leadership commitment to keep eHealth stakeholders apprised of its progress. The program has prepared quarterly status reports since the start of fiscal year 2009/10 and they have been well received by program stakeholders. This latest version of the quarterly status report incorporates a number of changes in response to recommendations provided by the BC Office of the Auditor General. The report will continue to evolve in response to those recommendations and to subsequent feedback received from program stakeholders.

The structure of the quarterly report is as follows:

# Section **Description and Status** For each project, provides the status of the project phases, highlights key **Project Status** activity from the reporting period and outlines current challenges of note. Indicates progress against the milestones identified in the eHealth Milestone Status Tactical Plan, March 2010 Update, and any formally approved changes. Outlines the projects' budgets and presents actual expenditures against **Budget Status** planned expenditures for the current fiscal year. Adoption Provides an indication of progress in achieving adoption targets. Describes the work under way to measure progress toward realization of **Benefits Evaluation** intended eHealth benefits.



# eHealth | Project Status



# **Provincial Laboratory Information Solution (PLIS) Project**

The PLIS Project is developing a provincial repository of diagnostic laboratory test results, populated from all public and private laboratories, accessible by authorized care givers through the EHR infrastructure.

#### Status by Phase:

Project Phase		Percent Complete		Status
Planning	$\rangle$	100%	>	Complete
Development	$\rangle$	100%	$\rangle$	The provincial repository is complete and in full production.
Deployment	>	35%	>	Deployment includes integration with source lab systems within each of the six health authorities (15% each) and with public labs (10%). As of the end of June, integration with the Provincial Health Services Authority and Interior Health Authority had been completed and work is progressing towards the completion of Northern health Authority in December.

## **Highlights for Reporting Period:**

- The lab feed for Interior Health was implemented on May 16 bringing the total number of lab results available within the repository to over 1 million.
- Work with Northern Health Authority got underway and progressing towards a December integration date.

- A number of options for completing deployment to the remaining three health authorities within two years are being considered. A decision regarding this direction is expected during the 2<sup>nd</sup> quarter.
- Limited availability of lab results may impact adoption. A significant number of lab results are not currently available through EHR as a result of legislative confidential and data mismatch errors. Regulation changes intended to address the legislative confidential issue are expected to be made this Fall.
- The exercise of consolidating services across the lower mainland has resulted in a high demand for lab resources as well as creating as yet unresolved questions related to responsibilities.
- Tight management of system enhancements within pending releases will be required to deliver within the allocated budget.



# **Provincial Diagnostic Imaging Project**

The Provincial Diagnostic Imaging Project (PDIV) will enable authorized users to access diagnostic images from throughout the Province via a diagnostic imaging viewer.

#### Status by Phase:

Project Phase		Percent Complete		Status
Planning	$\rangle$	100%	$\rangle$	Complete
Development	>	100%	>	From a diagnostic imaging project perspective, the development phase was a procurement exercise, leveraging an existing provincial contract to employ the diagnostic viewer provincially.
Deployment	>	10%	>	Deployment includes the rollout of the viewer to each of the six health authorities (10% each), community imaging clinic implementation (10%) and viewer integration with the EHR infrastructure (30%). As of the end of June, a limited deployment of the viewer within the Vancouver Coastal and Fraser Health Authorities had been completed.

## **Highlights for Reporting Period:**

- Now that a limited deployment of the provincial viewer has been completed, the responsibility for moving forward with the full deployment of the viewer throughout the lower mainland and to the remaining health authorities is transitioning from the Ministry to the Provincial Health Services Authority (PHSA).
- PHSA's plans for the completion of viewer deployment and integration with the EHR infrastructure are expected to be completed during the 2<sup>nd</sup> quarter of 2010/11.

- Currently PHSA's plans do not contemplate integration with the HIAL within the March 2012 timeframe for the viewer rollout. If the strategy is updated to include HIAL integration, it may impact the scheduled roll-out of the viewer to the HAs outside of the lower mainland.
- Viewer roll-out plans do not currently contemplate VIHA. All other HAs will be adopting the DI viewer.
- A consolidated provincial archive is outside the scope of completion for March 2012. HAs will continue to manage this individually.
- A strategy for community imaging clinics needs to be determined and, depending on the ability of the clinics to implement PACS, may impact adoption.



# **BC Panorama Project**

The BC Panorama Project, also referred to as the Public Health Information Project (PHIP), is implementing a Public Health Surveillance application called Panorama, developed in B.C. for Canada Health Infoway for national deployment. Panorama is an integrated suite of system components consisting of seven major modules:

- Communicable Disease Case Management
- Outbreak Management
- Vaccine and Inventory Management
- Family Health

- Immunization Management
- Notifications Management
- Work Management

#### Status by Phase:

Project Phase		Percent Complete		Status						
Planning	$\rangle$	100%	$\rangle$	Complete						
Development > 100%		>	The development phase was the configuration of the Panorama application for BC and the development of the Family Health component.							
Deployment	>	5%	>	Deployment includes the deployment of all Panorama modules to the Centre for Disease Control (40%) and all six health authorities (10% each). Technical deployment has been completed with the first limited user deployment on track for the end of the 2 <sup>nd</sup> quarter 2010/11.						

### **Highlights for Reporting Period:**

- The technical deployment of the Panorama solution into production was completed early in the first quarter. Specifically, Panorama is now technically "in production" with data, interfaces and production code. All activities to support Panorama "in production" have been completed.
- Inclusion of Inventory management into the deployment scope. Configuration and deployment planning is well underway, targeting an early September production date. Implementing the Inventory management module will enable the Province to better manage the inventory of publicly funded vaccines in times of a pandemic as well as obtain cost savings due to decreased wastage.

- > Stakeholder business cycles limit the implementation windows. Deployment during peak immunization season is not optimal due to resourcing constraints within the regional health authorities.
- Privacy and security constraints regarding the confidentiality of data present challenges to testing and conversion.



# **eHealth Drug Project (PharmaNet Modernization)**

Will implement a standards-based medication management solution and an e-Prescribing function that will enhance the current PharmaNet system, and support adoption within pharmacy, medical practice, health authority and other settings.

## Status by Phase:

Project Phase		Percent Complete		Status
Planning	>	100%	$\rangle$	A re-planning exercise was completed in the first quarter and the project has moved forward to implement the revised plan.
Development	>	10%	>	The development phase for eDrug Project includes the design and development of the medication management and ePrescribing functionality within the PharmaNet application. The solution vendor, MAXIMUS, has commenced design work which will continue into the 3 <sup>rd</sup> quarter of 2010/11.
Deployment	>	0%	>	Deployment includes the integration of the improved PharmaNet with the EHR infrastructure and deployment to pharmacists and physicians.

# **Highlights for Reporting Period:**

- The project has been re-planned in order to deliver clinical value by March 2012. Two options have been reviewed with a final decision pending on HIAL integration.
- > A project plan will be completed by the end of the second quarter reflecting the new direction.

- Tight management of the scope and budget of the project is required in order to deliver the functionality for the medication management framework and ePrescribing.
- The platform for the PharmaNet2 application must be upgraded. There are several options being considered and a full analysis of each option will be completed by the end of August. A decision regarding the new platform will need to be confirmed within the next quarter.



# **Client and Provider Registry Projects**

The registry projects developed repositories of BC patient and health care providers. The repositories function each function as a source of truth, linking with other systems to ensure that health system clients and providers are uniquely identified.

## Status by Phase:

Project Phase		Percent Complete		Status
Planning	$\rangle$	100%	$\rangle$	Complete
Development	$\rangle$	100%	$\rangle$	Complete
Deployment	>	100%	>	The client and provider registry systems have both been in operation for a number of years. The original scope of deployment for the client registry included active or passive integration with Northern, Vancouver Coastal and the Provincial Health Services Authorities. While not in scope for the project, Interior has since completed active integration with the client registry and the remaining health authorities are making plans to follow their lead.

# **Highlights for Reporting Period:**

Complete - Not applicable.

# **Challenges:**

While the registry projects were successfully completed, subsequent lessons learned related to the provincial EHR deployment have made the benefits of active integration with the client registry clear. As a result, all health authorities are moving forward with plans to integrate their systems with the client registry.



# interoperable Electronic Health Record Project

The Interoperable Electronic Health Record (iEHR) Project provides the core technical infrastructure supporting the provincial EHR, including the following primary components:

- eHealth Viewer a secure web-based application providing 'view' capability of health information to authorized clinicians,
- Health Information Access Layer (HIAL) enabling secure information exchange between health professionals, the information repositories of the provincial EHR and the source systems that feed the provincial EHR
- Secure Health Record (SHR) a repository for miscellaneous care-related reports and patient encounter records and, in particular, hospital discharge summary information.

# Status by Phase:

Project Phase		Percent Complete		Status
Planning	$\rangle$	100%	$\rangle$	Complete
Development	$\rangle$	100%	$\rangle$	The EHR infrastructure has been built and is in operation.
Deployment	>	20%	>	Deployment includes the integration of the HIAL with the four clinical EHR systems (40%) and eViewer deployment to all six health authorities (60%). As of the end of June, the lab domain had been integrated with the HIAL and viewer deployment within the Vancouver Coastal Health Authorities had been completed.

## **Highlights for Reporting Period:**

- The eViewer was deployed to early adopters for clinical use on May 26<sup>th</sup>; to 200 users at the Richmond Hospital on June 22<sup>nd</sup>; and the balance of Vancouver Coastal's 3,100 users on June 29<sup>th</sup>.
- Network connectivity to support Provide Registry synchronization with Panorama completed early in quarter.

- System enhancement requests exceed funding envelope. Tight management within pending releases will be required to deliver within the allocated budget.
- The eViewer requires further changes to allow it to be deployed outside of VCH. This pre-requisite work puts pressure on deploying to all Health Authorities by March 2012. Planning underway to mitigate this risk.



Projects:		% Complete
TeleHomecare	Improves care and reduces hospital readmissions of patients with Congestive Heart Failure through early detection and self monitoring.	90%
TeleOpthalmology	Improves retinal screening service access for populations at high risk of retinopathies (i.e. First Nations people and diabetics) living in rural and remote communities.	90%
TeleThoracic	Provides access to quality thoracic surgical care to residents of BC and the Yukon through videoconferencing technology.	85%
TeleWoundCare	Implements community-based wound care services throughout NHA with primary focus to support Home Care Nurses and staff in FN communities.	(closed)
TeleOncology	Improves access for patients and their families in remote and rural areas of the province to specialized oncology services via regional cancer centres.	85%
First Nations Telehealth Expansion	Builds and expands Telehealth capacity within First Nations communities. Establishes the technical and human resources in First Nation communities necessary to address health service access inequities within BC.	0%
Telepathology	Develop an integrated Telepathology network for consultation, education and quality assurance within the anatomical pathology and clinical laboratories in BC.	98%

# **Highlights for Reporting Period:**

- The TeleHomecare, TeleThoracic and TeleOncology projects have exceeded their anticipated adoption targets.
- ➤ The official launch ceremony for the TelehOphthalmology service was on April 16, 2010. Initial clinics have been held and several cases of diabetetic retinopathy and other ocular diseases have been diagnosed.
- The TeleWoundcare project has been closed and the remaining project funding transferred to the TeleOncology project.
- > Telepathology:
  - o Transition from project to operational status underway in FHA.
  - Phase 2b provincial telepathology standards and architecture requirements draft documents completed.
  - o There is now approximately 30% access by lab professionals to some form of telepathology in BC.

# Challenges:

> The First Nations Telehealth Expansion Project has been put on hold with Canada Health Infoway while First Nations, the Province and Federal governments work on a new governance model for health service delivery for First Nations.



# **Electronic Medical Record Systems Initiative**

The British Columbia Medical Association (BCMA) and the Ministry of Health Services (the Ministry) agreed to work collaboratively to coordinate, facilitate and support information technology planning and implementation for physicians as part of the 2006 Physician Master Agreement. The scope of the information technology includes: professionally hosted electronic medical record applications; implementation support; network connectivity; office hardware such as computers and printers; and email. The Electronic Medical Record (EMR) Program in the Ministry manages the relationship with the EMR Service Providers and TELUS, ensuring contract compliance while maintaining collaborative vendor relationships; coordinates the change and release management cycle associated with client requirements; and oversees the early deployment of the Private Physician Network (PPN).

The Physician Information Technology Office (PITO) coordinates the implementation of the information technology products and services with EMR service providers and physician practices, and disburses funds to physicians as defined in the Physician Master Agreement.

#### **Highlights for Reporting Period:**

- ≥ 2100 physicians had either implemented their EMR or were in the process of implementing their EMR as of March 31, 2010.
- PITO Communities of Practice and Divisions of Family Practice are strongly aligned to support integrated community care and the attachment initiative.
- eReferral pilot projects well underway in leading Communities of Practice with extremely positive physician and clinic staff feedback.
- Post Implementation Support (PIS) pilot projects, established to maximize the impact of EMRs, focused primarily on chronic disease management, mental health, prescribing, and workflow optimization.
- PITO Peer-2-Peer (Local Physician Champion) program proving in valuable in creating capacity and coordination in the physician community to support uptake and optimization.
- An EMR integration strategy has been drafted that outlines the roadmap for information and service integration between EMRs and the provincial electronic health record systems.
- A new funding program, entitled the Alternative Specialist Funding Model, has been designed to address the needs of some specialist physicians for flexibility in the selection and adoption of EMRs.

- Information technology change management is currently a challenge for many practices.
- While there are high adoption levels amongst larger full service practices clinics (6+ physicians), achieving similar rates amongst solo and small (2-3 physician) clinics and specialists in complex environments remains a challenge.
- Some practices on the Private Physicians Network have experienced bandwidth issues which are being resolved currently by the network service provider.

# **eHealth | Milestone Status**

The table below provides the status of the key eHealth project deployment milestones from the Executive Summary of the eHealth Tactical Plan. The "Target Quarter" represents the approved timeframe for the completion of a milestone. Footnotes on target quarters refer to approved change requests listed in the subsequent table.

Project	eHealth Milestones	Target Quarter	Status
	Fiscal Year 2010/11		
BC Panorama	Panorama Technical Deployment in Production	1	Complete - application in operation, ready for deployment to intended users
Telehealth	TeleOphthalmology services Go-Live	1	Complete - services to improve retinal screening services access for populations at high risk of retinopathies living in rural and remote communities went live
Telehealth	TeleOncology, Phase III (NHA and VIHA)	1	Complete - implemented in NHA and VIHA
Telehealth	TeleThoracic services Implementation (PHSA)	1	Complete - there are minor technical problems with the stethoscopes but they are only a small part of the solution and the TeleThoracic services are now being delivered
EHR/PLIS	Deploy province-wide client identity solution for PLIS in PHSA and IHA	2	
EHR/PLIS	On-board public laboratory data for NHA	2	
PDI	Deploy Philips iSite Viewer in IHA	2	
PDI	Philips iSite Viewer deployment in NHA, PHSA and VIHA	3 <sup>2</sup>	
BC Panorama	Production implementation of Panorama Inventory module	4	
EHR/PLIS	On-board remaining public laboratory data	4	
Telehealth	Provincial Scheduling System for clinical and education consults	4	
Telehealth	Establish integrated secure network connectivity between the BC health authorities, First Nations and other Telehealth partners	4	
Telehealth	Provincial Videoconferencing Bridging Services	4	

Project	eHealth Milestones	Target Quarter	Status
Telehealth	Provincial Videoconferencing Support Service (Help Desk)	4	
EHR/PLIS	Establish Laboratory Distribution Services	4	
EHR	Implement User Identity/Federation Solution	4	
EHR	Province-wide Client Identity Management in PHSA and IHA	4	
EHR	Complete SHR deployment	4	
EHR	Establish eHealth Operations	4	
	Fiscal Year 2011/12		
BC Panorama	Panorama Production Implementation	1	
EHR/PLIS	On-board private laboratories	2	
EHR/EMR	EMR integration to EHR	2	
EHR/SHR	Immunization repository as a HIAL service	3	
EHR/SHR	Care summaries (acute discharge summaries) and Shared Care Plans	3	
EHR	Deploy eHealth Viewer to remaining health authorities	4	
EHR/PDI	PDI iSite Viewer integration with iEHR and HIAL	4	
EHR	Province-wide Provider Identity full deployment	4	
eDrug	Medication Management Framework implemented in PharmaNet	4	
EHR/SHR	Clinical observations, chronic disease management	4	
	Fiscal Year 2012/13		
EHR/SHR	Referrals and consults; spirometry	2	
eDrug	PharmaNet-eRx Go-Live (implemented into production environment	2	
EHR/eDrug	ePrescribing	4	

# **Approved Change Request Summary**

The table below represents a summary of the approved changes to the eHealth Tactical Plan.

			Impacted					
CR	Project/ Work Stream	Scope/Quality Quality Description		Description				
1	iEHR/PLIS	EHR Integration Schedule Re-Planning	N ************************************	Y	Y	<ul> <li>CR included the following changes reflecting the impacts of competing priorities (e.g. Lower Mainland Consolidation) and compressed timeline:</li> <li>Shift completion of health authority engagement for deploying eViewer out to 2<sup>nd</sup> quarter 2010/11</li> <li>Shift out to 2<sup>nd</sup> quarter 2010/11 of 'user identity' and 'Determine SHR solution' milestones</li> </ul>		
2	PDI	Transfer of PDI project delivery responsibilities to PHSA	N	Y	N	Deployment of DI Viewer to NHA, PHSA and VIHA and full deployment to FHA and VCHA shifted out to the 3 <sup>rd</sup> quarter of 2010/11 in recognition of the work required to transition deployment responsibilities to PHSA.		

# eHealth | Budget Status

**Budget Table 1:** Presents the capital costs of the provincial EHR projects through 2009/10, the approved budget for 2010/11 and planned costs to completion. Infoway recoveries received to date are also provided.

			Cap	Duningtod	Maximum	Recoveries							
Provincial EHR Foundation System			Actu	ual Expen	ditures			Plann	ned (Estim	ates)	Projected System Total	Infoway Portion of Costs	received as of June
	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	TOtal		2010/11
Provincial Lab Information Solution	0.091	0.042	0.417	13.899	8.645	12.748	3.919	6.000	1.500	0.000	47.261	21.385	9.701
Provincial Diagnostic Imaging	0.000	0.000	0.000	2.160	1.095	5.758	2.962	3.000	2.800	0.000	17.775	13.331	4.129
BC Panorama Project	0.000	0.000	0.409	1.534	2.053	6.443	14.526	8.800	3.800	0.000	37.565	9.818	2.901
Registry Systems (Provider & Client)	1.652	4.286	7.431	1.603	0.199	2.622	0.000	0.000	0.000	0.000	17.793	16.935	16.935
eHealth Drug	0.000	0.000	0.679	3.298	14.405	7.901	6.504	13.500	14.500	3.500	64.287	22.520	1.365
EHR Infrastructure Systems (iEHR)	0.000	0.000	0.011	13.912	13.581	22.509	9.225	7.800	5.500	1.800	74.338	37.537	16.473
Electronic Health Record	1.743	4.328	8.947	36.406	39.978	57.981	37.136	39.100	28.100	5.300	259.019	121.526	51.504

**Budget Table 2:** Actual versus planned capital costs by quarter for the provincial EHR projects in 2010/11.

Provincial EHR Projects	Planned versus Actual Expenditures	Apr - Jun	Jul - Sep	Oct - Dec	Jan - Mar	2010/11 Total
Provincial Lab Information	Planned	150,000	850,000	2,500,000	2,500,000	6,000,000
Solution	Actual/ Forecast	26,000	888,000	2,532,000	2,532,000	5,978,000
Drovingial Diagnostic Imaging	Planned	85,250	982,250	265,750	1,666,750	3,000,000
Provincial Diagnostic Imaging	Actual/ Forecast	9,113	982,250	265,750	1,666,750	2,923,863
DO Double of	Planned	2,200,000	2,200,000	2,200,000	2,200,000	8,800,000
BC Panorama Project	Actual/ Forecast	2,358,000	2,222,000	2,163,000	2,092,137	8,835,137
al lealth Durin	Planned	1,500,000	4,000,000	4,000,000	4,000,000	13,500,000
eHealth Drug	Actual/ Forecast	1,319,271	4,060,243	4,060,243	4,060,243	13,500,000
EHR Infrastructure Systems	Planned	137,000	1,163,000	3,250,000	3,250,000	7,800,000
(iEHR)	Actual/ Forecast	24,000	1,163,000	3,338,000	3,338,000	7,863,000
Electronic Health Record	Planned	4,072,250	9,195,250	12,215,750	13,616,750	39,100,000
Total	Actual/ Forecast	3,736,384	9,315,493	12,358,993	13,689,130	39,100,000

# eHealth | User Adoption

Successfully building eHealth project solutions is not enough to ensure the anticipated benefits of eHealth are realized. Adoption, or uptake by system users, is critical to success.

User adoption targets will be determined, and progress towards achieving them monitored, for the following systems:

- eHealth and Diagnostic Imaging Viewers
- eDrug (PharmaNet)
- Panorama

- Electronic Medical Record Systems
- Telehealth solutions

### **Highlights for Reporting Period:**

> The target users for the eHealth systems vary by health authority. The Ministry is currently working closely with the health authorities to identify the target user groups for systems deployment, starting with the lower mainland.

#### **EHealth Viewer and Provincial Diagnostic Imaging Viewers:**

The target number of users has not been confirmed across all health authorities for the viewers. As of the end of the 1<sup>st</sup> quarter however, the eViewer has been deployed to approximately 3,100 clinical users in the Vancouver Coastal Health Authority and the Provincial Diagnostic Imaging Viewer had been deployed to a limited number of users in the Vancouver Coastal and Fraser Health Authorities.

# eDrug (PharmaNet):

PharmaNet, which will be upgraded through the eDrug Project, is currently accessed by over 1,500 physicians and around 4,730 pharmacists across BC from hospitals, pharmacies and medical practices.

### Panorama:

➤ The target number of Panorama users has not been confirmed but it is currently estimated that the system will be available to 50 - 75 users (Centre for Disease Control and the Northern Health Authority) in September, 2010, up to 200 users in February, 2011, and to greater than 3,000 users in the Spring of 2011.

#### **Electronic Medical Record Systems:**

➤ The following EMR targets are published in the ministry's 2010/11-2012/13 Service Plan, Performance Measure 7. The 2009/10 target was successfully achieved and the program is on track to achieve the 2010/11 target.

Performance Measure	2009/10	2010/11	2011/12
	Forecast	Forecast	Forecast
Percentage of physicians implementing EMR systems	40%	60%	75%

#### Telehealth:

The TeleHomecare, TeleThoracic and TeleOncology projects have exceeded their anticipated adoption targets.

# eHealth | Benefits Evaluations (Outcomes)

The eHealth program is being undertaken in order to realize benefits for British Columbians and the overall health system, both clinical and financial. The purpose of the Benefits Evaluation stream of work is to measure those benefits over the years following the deployment of eHealth solutions and their adoption by intended users.

BC is using an evaluation framework promoted by Canada Health Infoway, which includes dimensions of quality (system, information and service), system usage (use and user satisfaction) and net benefits (quality, access and productivity). As a starting point, baseline and measures for each eHealth component will be determined. The Interoperable Electronic Health Record and Registry systems will not be assessed from a benefits evaluation perspective as they are enabling infrastructure components.

### **Highlights for Reporting Period:**

- > Early work is underway in all eHealth domains to frame the indicators and establish baselines.
  - Experts from the University of Victoria have been engaged to conduct an eDrug Benefits Evaluation including the development of eDrug indicators and a Benefit Evaluation baseline. Lessons learned from this work will be leveraged to determine eHealth baseline measures for other eHealth domains. The University of Victoria developed the Canada Health Infoway Benefits Evaluation framework that is the foundation of the BC Ehealth Benefits Evaluation Methodology.
  - The Benefits Evaluation lead is working with the ehealth project teams, Infoway and the health authorities to develop plans for establishing baselines and indictors.
- While work on benefits indicators continues, examples of a few of the early benefits indicators that provide insight into expected benefits are provided below:

Project	Example Indicators	
Provincial Laboratory Information Solution	<ul> <li>PLIS access for health care professionals authorized to access recent and historical test results from public laboratories.</li> </ul>	
Provincial Diagnostic Imaging Project	Computer-enabled access for all health care professionals authorized to access recent and historical diagnostic imaging information.	
TeleHomeCare	<ul> <li>Increased number of communities with access to telehomecare services.</li> </ul>	