



### Standards work underway in all *Inforoute* Programs

#### *EHR*S Blueprint nears completion of a major revision

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Welcome to the third edition of the Canada Health Inforoute Standards and Architecture Newsletter. Since our last newsletter, the *Inforoute* teams, along with our jurisdictional, clinical and private sector partners, have been very busy advancing the agenda. We are pleased to report that we now have standards work underway in all programs, ranging from planning work in the interoperable EHR program to completed work, such as the Provider Registry which has now passed HL7 International membership ballot.

A key accomplishment is the fact that all the processes are now in place to support the major decisions of the Standards Collaboration Process (SCP), i.e., adapt/adopt/develop decisions, and formal approval based on a number of well-defined principles and guidelines. This is key in accelerating the standards agenda and ensuring adoption by those who are buying solutions, and those who are developing products that support the pan-Canadian standards.

Four of our pan-Canadian Standards Groups are now moving work through the SCP for approval. These groups include: Diagnostic Imaging interoperability profiles for interactions with registries; the HL7 v3 electronic drug messaging standard (CeRx); the HL7 v2.4 and v3 Client Registry messaging standards; and the HL7 v3 Provider Registry messaging standards. Meanwhile, the pan-Canadian Client Registry standard has been implemented in two jurisdictions – Capital Health (Edmonton, AB) and Newfoundland and Labrador. In addition, other jurisdictions are committing to these standards in related projects, i.e., Newfoundland and Labrador's use of CeRx and Nova Scotia's use of the Client Registry standards.

As well, two other key pan-Canadian standards groups are also up and running: Jurisdictional Laboratory Information Systems, and clinical terminology for the Interoperable EHR. The Public Health Surveillance group is funded and is being formed. Read on for more information.

On the architecture side, the Privacy and Security Architecture which was published less than three months ago has now been adopted by the jurisdictions as the gold standard for privacy and security. The jurisdictions are now able to integrate this seminal work on healthcare privacy and security into their project architecture, project plans and RFPs.

The second version of the EHRs Blueprint reached an important milestone with the phased release of three information packages which began at the end of October and will end in February 2006. More information is included in this newsletter.

Looking back over the previous issues of this newsletter, I can see we have

had a lot to report on standards and architecture this year. This progress has been made possible by everyone on the project teams and many of you who have been consulted on the work during the course of its development. I thank you very much for all of your contributions.

These milestones are important measures of success. But the most important measure of success for us at *Infoway* is the use of the standards and architecture work products by all of our stakeholders which then leads to a healthcare system that is delivering higher quality care, is more efficient and is safer for the patient.

I hope you enjoy reading about our progress and successes in this issue. Please do not hesitate to contact me at [dgiokas@infoway-inforoute.ca](mailto:dgiokas@infoway-inforoute.ca) if you have any questions or wish to suggest a topic for future newsletters.

**Dennis Giokas,**  
Chief Technology Officer  
Canada Health Infoway

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### Standards Collaboration Process (SCP)

When it comes to standards-related activities, the pan-Canadian EHR Standards Collaboration Process is having a busy fall season. Over the summer, both the EHR Standards Advisory Committee and the EHR Standards Steering Committee met on a number of occasions.

Members of both Committees have now agreed on the process that will guide the adopt/adapt/develop decisions related to pan-Canadian EHR Standards.

There is also agreement on the process to deliver formal approval of pan-Canadian EHR standards. As a result, the following standards activities are now underway:

- The Provider Registry pan-Canadian Standards Group announced a formal review cycle for its Provider Registry messaging specifications which began October 24.
- The Client Registry pan-Canadian Standards Group announced a formal review cycle for its Client Registry messaging

- specifications which began October 24.
- The EHR Clinical Terminology Integration pan-Canadian Standards Group has announced a pending review cycle for recommendations related to the adoption of various clinical terminologies core to the pan-Canadian EHR. Further information on this review cycle can be found on *Infoway's* website.
  - Membership for the Lab pan-Canadian Standards Group
- (pCSG) has been finalized and the first meeting was scheduled to take place in early November.
- The group will focus on the adopt/adapt/develop decision for pan-Canadian laboratory standards.

To find out more about the Standards Collaboration Process at *Infoway*, visit the Standards section of our web site.

[CLICK HERE](#)

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### HL7v3 at *Infoway*

*As part of Infoway's strategic direction for the development of the interoperable EHR, Health Level 7 version 3 (HL7 v3) has been chosen as the desired standard for clinical messaging. Accordingly, all new messaging standards being developed with Infoway investment funds must be developed using HL7 v3.*

#### **The Client Registry and Provider Registry pan-Canadian Standards Groups**

*Infoway* is pleased to announce both the Client Registry (CR) and Provider Registry (PR) specifications will be submitted to HL7 Canada for membership ballot this fall. In addition, HL7 International announced in September that the Provider Registry specifications had successfully passed membership ballot, and would be published this Fall as normative standards.

As well, HL7 International's Patient Administration Technical Committee

(PATC) passed the Client Registry specifications through Committee ballot in September, paving the way for membership balloting to occur in January 2006.

These two *Infoway* lead projects were tasked with refining the baseline messages required to support pan-Canadian Client and Provider Registry interactions; developing specifications in HL7 Version 3 format to meet the Canadian and international balloting approval processes; shepherding the messages through the HL7 International and HL7 Canada balloting processes; and through the Standards Collaboration Process (SCP), securing pan-Canadian approval of the messages.

The CR and PR projects have been running concurrently, sharing a common support team. Over the past 13 months we have conducted three face-to-face meetings of each pCSG, plus numerous teleconferences, in an effort to refine the artifacts to meet pan-Canadian requirements and achieve consensus on recommending a pan-Canadian

standard to the Standards Advisory and Steering committees.

For each of the CR and PR pan-Canadian Standards Groups, deliverables include:

- Messaging Package Overview (v3 specifications)
- HL7 v2.4 Conformance Profiles (for CR)
- Terminology/Vocabulary codesets
- Implementation Guide

The SCP Standards Advisory Committee has commenced the review of both the Client and Provider Registry specifications for approval as pan-Canadian standards. This process is expected to conclude in early 2006.

To learn more about these projects, and the Client and Provider registry pCSG's, visit the Web Forum. [CLICK HERE](#)

### CeRx progress

The Canadian Electronic Drug (CeRx) Messaging Standard project is an *Infoway*-led standards development initiative. It will see the development of pan-Canadian HL7 version 3 message specifications to support clinical drug information interchange between and among clinicians as well as the drug portion of Electronic Health Records (EHR) at a provincial, territorial or regional level. The messages will enable not only the establishment of drug profiles within the EHR, but also the workflows necessary to enable electronic prescribing.

A significantly updated version of the specifications that includes vocabulary recommendations and a revised bundling of messages was released in September. This version provided the

basis for a very successful CeRx pan-Canadian Standards Group (CeRx-pCSG) review meeting in Montreal. Based on the progress of this meeting, the specifications are substantially complete, subject to completion of a pending quality assurance review as well as closure of open issues and feedback items.

The most recent HL7 ballot cycle (September 2005) included the bulk of the CeRx specifications as "for comment" content. Based on this cycle, it was possible recently to reconcile the Canadian content with international requirements in order to build the foundation for a committee ballot, scheduled for the January 2006 cycle. During this upcoming cycle most, if not all, remaining CeRx content will be released "for comment" in internationalized form in order to begin its journey towards approval.

Coincident with these HL7-based approval processes CeRx is expected to begin to pursue formal approval through the EHR Standards Collaboration Process governance committees by announcing an upcoming approval review cycle. The goal will be the establishment of a Canadian Stage 1 EHR Standard in early 2006.

For more information about CeRx please visit the CeRx forum. [CLICK HERE](#). In addition to allowing you to download the complete specifications, the CeRx Discussion Forum enables you to engage in discussions pertaining to issues and observations about the CeRx specifications.

If you require further information please do not hesitate to contact the project manager, Marc Koehn ([mkoehn@infoway-inforoute.ca](mailto:mkoehn@infoway-inforoute.ca))

## EHR Clinical Terminology Integration Project

The EHR Clinical Terminology Integration (CTI) pan-Canadian Standards Group (pCSG) was created in July, 2005. It comprises 13 members from across Canada, representing various clinical disciplines and health information management professionals.

A Program Standards Specialists Team (PSST) was also established to ensure a cross-program (core EHR, laboratories, Drugs, diagnostic imaging, public health, telehealth) perspective on clinical terminology standards. The PSST membership includes standards experts from each *Infoway* investment program.

The project team developed a statement of requirements for EHR clinical information groupings (i.e., sub-domains or data elements in the EHR) leveraging previous *Infoway* work (e.g. the EHR Data Definitions and Standards Project) as well as recognized international and Canadian work. The review with the PSST helped to validate which clinical information groupings needed to be addressed by the CTI project as well as those under the responsibility of other *Infoway* programs.

A review of major international assessments of clinical terminologies resulted in a short list of three candidate terminologies for the core information of the EHR: ICD-10-CA, CCI and SNOMED CT. The Standards Collaboration Process (SCP) template of Principles and Guidelines was used to assess these terminologies for the EHR.

The first meeting of the pCSG took place August 30-31 to agree on their terms of reference, review requirements, discuss clinical terminology priorities,

and review the assessments of candidate terminologies. The end result was a decision by the pCSG to announce a pending review cycle of the decision to adopt/adapt/develop terminology standard(s) for the priority core clinical information groupings of the EHR.

Licenses for the three candidate terminologies were obtained for pCSG and PSST members and education sessions were organized with Canadian Institute for Health information (CIHI) and SNOMED International to coach members on how to use the terminology browsers for evaluation purposes. Subsequent sessions were held with CIHI and SNOMED International to help answer any questions, address issues and validate perceptions. General information webcast sessions were held in mid-October to provide information on the project and share preliminary findings with interested stakeholders including representatives from jurisdictions, provider communities and vendors.

The CTI pCSG met a second time at the end of October to review findings, update requirements and complete the terminology assessments. The pCSG concluded that SNOMED CT was the best choice of terminology for 24 priority clinical information groupings (CIGs)—or sub-domains— of the EHR. Additional work is required on the other three priority CIGs. The pCSG decided to initiate the review cycle of the recommendation to adopt SNOMED CT as the standard terminology for core EHR clinical information. The cycle was to start November 4<sup>th</sup> and will end on December 12. The targets for the final decision-making steps are the Standards Advisory Committee meeting in January and the Standards Steering Committee meeting in February 2006.

Pan-Canadian general webcast sessions in English and French are planned to explain the project and the terminology standard recommendation, and answer questions. The actual dates and time can be found on the CTI Web Forum. [CLICK HERE](#) They will be communicated by email invitations to the usual stakeholder groups.

Project documentation and pCSG meeting documentation is available on

the CTI web forum. [CLICK HERE](#) Members of the CTI pCSG are identified on the project overview web page. [CLICK HERE](#)

Comments and queries should be addressed to Julie Richards, Director Standards at [jrichards@infloway-inforoute.ca](mailto:jrichards@infloway-inforoute.ca)

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### The Diagnostic Imaging and Teleradiology pan-Canadian Standards Group

The Diagnostic Imaging/Teleradiology pan-Canadian Standards Group (DI/Telerad pCSG) is an *Infloway*-led standards initiative. This group, which was formed in March 2005, is tasked with overseeing the decision to leverage, adapt or adopt Electronic Health Record (EHR) interoperability profile specifications for DI and is responsible for reviewing and with approving Teleradiology use cases and business requirements.

In October 2005, the DI/Telerad pCSG approved the recommendation of the Integrating the Healthcare Enterprise's (IHE) Cross-Document Sharing for Imaging profile (XDS-I profile) to the Standards Advisory Committee and the Standards Steering Committee which brings us one step closer to having this profile approved as a pan-Canadian standard. The XDS-I profile provides an opportunity to equip *Infloway* DI investment projects with the ability to

seamlessly share DI results and interoperate with Client Registries.

The key deliverables that the DI/Telerad pCSG has reviewed and approved include:

- DI Use case scenarios that reflect information sharing in Canada;
- XDS as appropriate profile for interoperability between DI, Registries and applications interoperating with the EHR;
- XDS-I as the appropriate profile for interoperability between DI, Registries and applications interoperating with the EHR in a Canadian setting;
- The need for additional standards definition;
- Teleradiology requirements and models; and
- A use case scenario that reflects the state of Teleradiology in Canada.

To find out more about the DI/Telerad pCSG, visit the DI/Telerad pCSG Forum. [CLICK HERE](#)

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### Public Health Surveillance Standards

The objective of this project is to define the standards needed to support the Public Health Surveillance (PHS) program. The PHS program strategy is

aimed at building a pan-Canadian solution system from commercial off-the-shelf (COTS) and government off-the-shelf (GOTS) software packages. It will use a Joint Solution Procurement strategy with our lead partner, British Columbia, to build the solution architecture in partnership with system integrators.

This project will define the standards requirements that need to be established, namely data and messaging standards and/or interoperability profiles that should be built into the solution system as it is designed and developed. The Phase 0/1 scope of the project will be to:

- Define the quantity and nature of work to be done in the PHS standards development effort;
- Develop a set of estimates and a project plan for the Phase 2 project to follow; and
- Establish the PHS pan-Canadian Standards Group (pCSG).

Recruitment for membership on the PHS pCSG is expected to be completed by end of November.

The PHS standards project got underway during the summer and is expected to be completed at the end of this year at which time approval will be sought for Phase 2 work.

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### Laboratory pan-Canadian Standards Group Project

Common laboratory messaging and terminology standards and interoperability profiles are critical to achieving *Infoway's* goal of an interoperable pan-Canadian Electronic Health Record. To accelerate the establishment and adoption of Laboratory pan-Canadian Standards, *Infoway* has initiated the Laboratory pan-Canadian Standards Project (Lab Standards Project).

The purpose of Phase 1 of the Lab Standards Project is to develop an adopt/adapt/develop recommendation by the pan-Canadian Laboratory Standards Group and a decision from the EHR Standards Steering Committee on the approach.

The goal of this project is to ensure information contained within a lab test or result is standardized, thus enabling semantic interoperability of clinical information between systems for the

benefit of the end user clinician. This project will define the standards requirements that need to be established, namely data and messaging standards and/or interoperability profiles and will undertake the following activities:

- Identify business requirements for pan-Canadian Laboratory standards;
- Identify the gap between existing provincial and international lab standards and the business requirements;
- Validate them with the Lab pan-Canadian Standards Group (pCSG); and
- Develop a project plan to adopt/adapt/develop the pan-Canadian Laboratory Standards.

The Lab Standards Project got underway in September and is expected to be completed at the end of this calendar year at which time approval will be sought for Phase 2 work.

## iEHR Standards Initiative

*Infoway* is currently developing a plan and approach to launch a project to support the standards requirements of iEHR program. The target is to have initial iEHR messaging and terminology specifications ready for iEHR implementation projects in the summer of 2006.

Initial scope and planning have been outlined based on jurisdictional project requirements and priorities. The project

will likely include three packages to be released as follows:

- Encounter Summary and Discharge Summary
- Clinical Summary and Service Delivery Location
- Critical Observation, Referrals and Health Conditions

Consistent with the *Infoway* standards principles, the project will adopt as much as possible from initial work done by the jurisdictions as well as from work completed in other countries.

## EHRs Blueprint Evolution

The EHRs Blueprint Evolution Project is pleased to announce it has begun its phased release of the next major Blueprint revision for the sharing of Electronic Health records across the continuum of care in Canada.

The first Blueprint revision package, which contains material most relevant to existing projects and those in the planning phase, was released at the end of October. Distribution is limited to *Infoway* investment project teams and internal staff, and is available in electronic format only. It includes:

- The new EHRs Blueprint presentation;
- The original Blueprint updated with a critical new section – EHR Infostructure Functioning Principles such as consistent ways of representing clinical data from a variety of sources, and auditing and logging of transactions with the EHR;
- The EHRs Clinical Reference Framework, which includes:

- Expression of requirements for the interoperable EHR in the form of storyboards, use cases, and clinical activities documentation;
- Conceptual data model for the Shared Health Record repository; and
- EHR Interoperability Profiles that define how Point-of Service Applications interact with the EHR infostructure

The Clinical Reference Framework has been captured in a diagramming tool and repository that uses the Unified Modeling Language, and will be made available in both XML and navigable HTML formats.

The second package, to be released in December, includes more in-depth materials describing the services and capabilities internal to an implementation of the EHR infostructure. Again distribution will be in electronic format only and limited to *Infoway* investment project teams and internal staff. This release includes:

- Information on how the program areas of Public Health Surveillance and Telehealth have been incorporated into the Blueprint.
- Services architecture improvements differentiating the common services and the group of services now called Longitudinal Record Services.
- How registries and domain systems in Lab, DI, and Drugs are integrated into the EHR infostructure.
- Infostructure Interoperability Profiles describing how services are orchestrated and interact within the EHR infostructure.
- Details on the Shared Health Record Conceptual Data Model and its various views.
- How commercially available products can provide much of the services and interoperability capabilities provided by an EHR infostructure.

The first two packages of Blueprint material will be reviewed internally by *Infoway's* Solution Architecture Group (SAG) and then externally by our Validation and Focus Group participants. Once their feedback has been incorporated, these packages will be released for use by *Infoway* staff and our stakeholders engaged in *Infoway* investment projects. This limited release of the material is necessary to ensure that the material is available on a timely basis, and that it can be properly supported by the architecture team in its application to projects.

The third package represents the “final” version of the Blueprint v2, with professionally rendered graphics, fully translated, and incorporated into the KnowledgeWay website. It will be available to the general public in February 2006 and will include all of the material in the previous packages as well as the following items:

- Refined information on the use of the EHRs Blueprint within the context of the whole health enterprise;
- Key economic drivers;
- Proposed EHR infostructure deployment models necessary to meet varying jurisdictional needs, with some examples of interim states;
- Potential new applications made possible by the EHR; and
- The much-anticipated summary document “The EHRs Blueprint Reduced – Enterprise Architecture for Those Not Technically Inclined”

In the interim, any current *Infoway* investment project can request an update by their representative from the SAG architecture team. An updated presentation on the EHRs Blueprint will be presented at the CIHI Partnership for Health Informatics meeting in Victoria, BC on November 16.

For more information, join our EHRs Blueprint Evolution online forum [CLICK HERE](#)

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## Privacy and Security Architecture Project

It has been less than three months since its publication and already *Infoway's* Privacy and Security Architecture (P&SA) has been adopted by jurisdictions as the gold standard for

privacy and security. The three key deliverables are:

1. Privacy and Security Architecture v1.1
2. Privacy and Security Requirements for an Interoperable EHR v1.1
3. EHR Privacy and Security Standards Assessment v1.0

All project deliverables are available at the PSA web Forum. Please see link at the end of this article.

Several of the leading-edge privacy protective features defined in the architecture have been included in the design of the Alberta and Ontario Client Registry projects.

The first-ever definition of privacy and security requirements for an interoperable EHR as well as the architecture have demonstrated benefits for jurisdictions by providing a comprehensive set of requirements that are easily integrated into the Request for Proposal (RFP) processes for the following projects;

- Newfoundland and Labrador Drug RFP;
- Newfoundland and Labrador, and New Brunswick iEHR projects; and
- The Diagnostic Imaging coordinated procurement being issued by three jurisdictions.

The privacy and security requirements document has also proven of value to stakeholders when performing Privacy Impact Assessments (PIAs) with the various *Infoway*-funded projects.

In other P&SA news, *Infoway* will shortly be publishing a non-technical summary of the P&SA architecture. This 20-page document is intended to provide a non-technical audience with a business

perspective of the conceptual architecture and explain how it addresses privacy and security concerns within an interoperable EHR.

On June 2, 2005, a first-ever Canadian event occurred when *Infoway*, the e-Health Office at Ontario's Ministry of Health and Long-Term Care (MOHLTC) and Ontario Hospital Association members came together to discuss options for consent management. The *Infoway*-led workshop environment provided e-Health stakeholders with a forum in which they could discuss issues, potential solutions and future considerations for addressing Consent Management. This engagement demonstrated *Infoway's* ability to play a leadership role in helping to identify and resolve the complex issues associated with eConsent within the context of an interoperable EHR.

Some of the key conclusions of the workshop were;

1. It is imperative that common definitions on requirements of legislation be established. Participants in the workshop suggested several potential approaches to addressing this requirement.
2. The breakout groups agreed that it was not logical to discuss technology in depth without proper definitions and requirements first. It was indicated, however, that from the general understanding of Ontario's Personal Health Information Protection Act (PHIPA) requirements, there would be considerable development time and funding needed to meet these requirements.

3. Finally, the breakout groups re-emphasized the need for a common understanding of definitions and terms. There was wide agreement that the ultimate goal of PHIPA with the lockbox component and hospitals' current capability to meet the legislative requirements is separated by a very large gap. There is a need for a strong policy direction to close this gap,

with consensus that it be the MOHLTC e-Health Office.

For more details on the workshop and its conclusions please see information on the eConsent workshop available at the OHA web site; [www.oha.ca](http://www.oha.ca)

For more information, join our PSA on-line forum [CLICK HERE](#)

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