Canada Health Infoway | Inforoute Santé du Canada

Architecture and Standards at Infoway

IHE Connectathon 2007

January 16, 2007

Dennis Giokas
Chief Technology Officer
Canada Health Infoway Inc.

Creating Healthy Connections

Outline

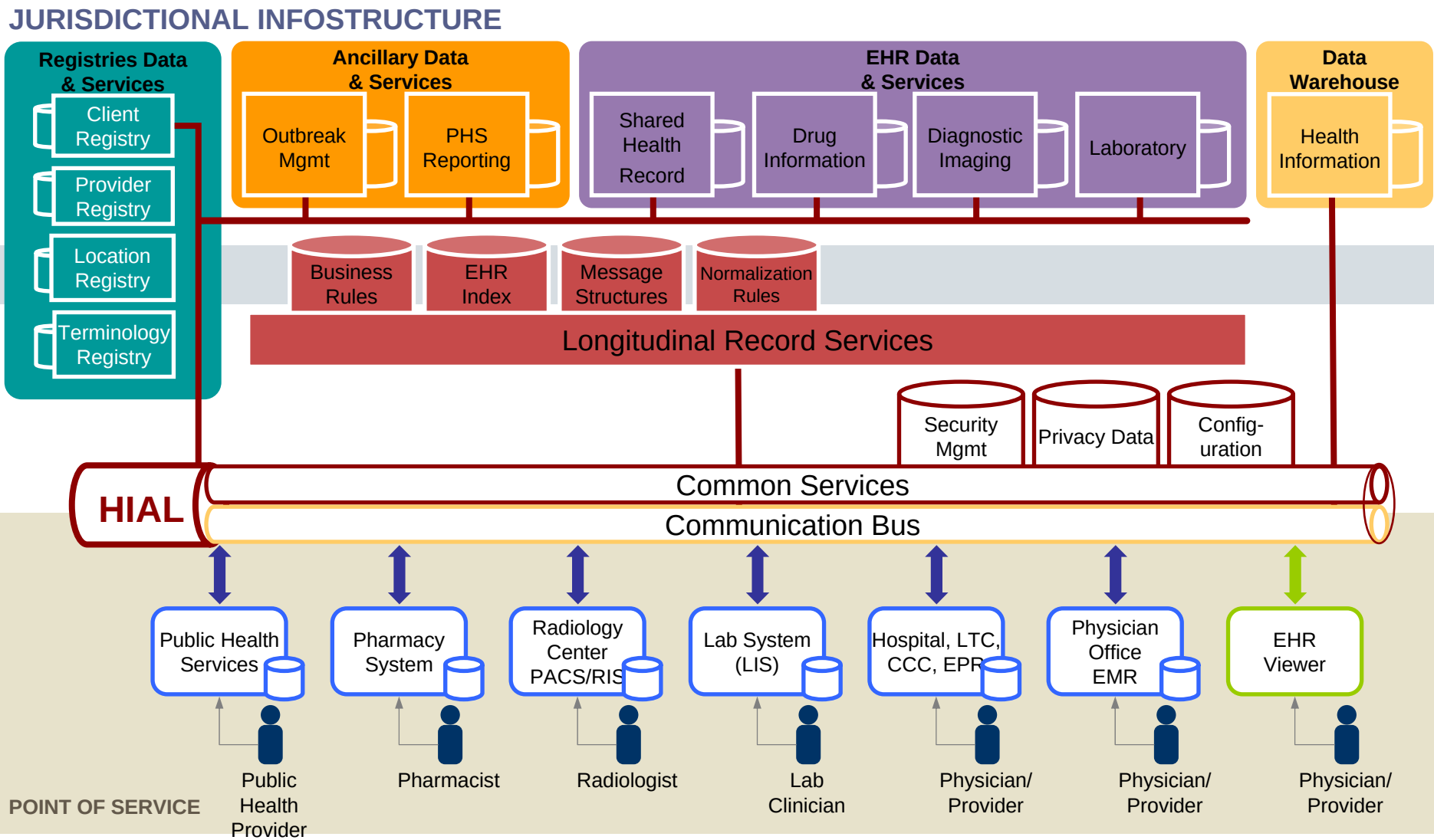
- Key Definition
- Solution Architecture
- Standards for Interoperability
- Infoway, the EHR and IHE
- Conformance Testing
- Some Thoughts Going Forward

EHR

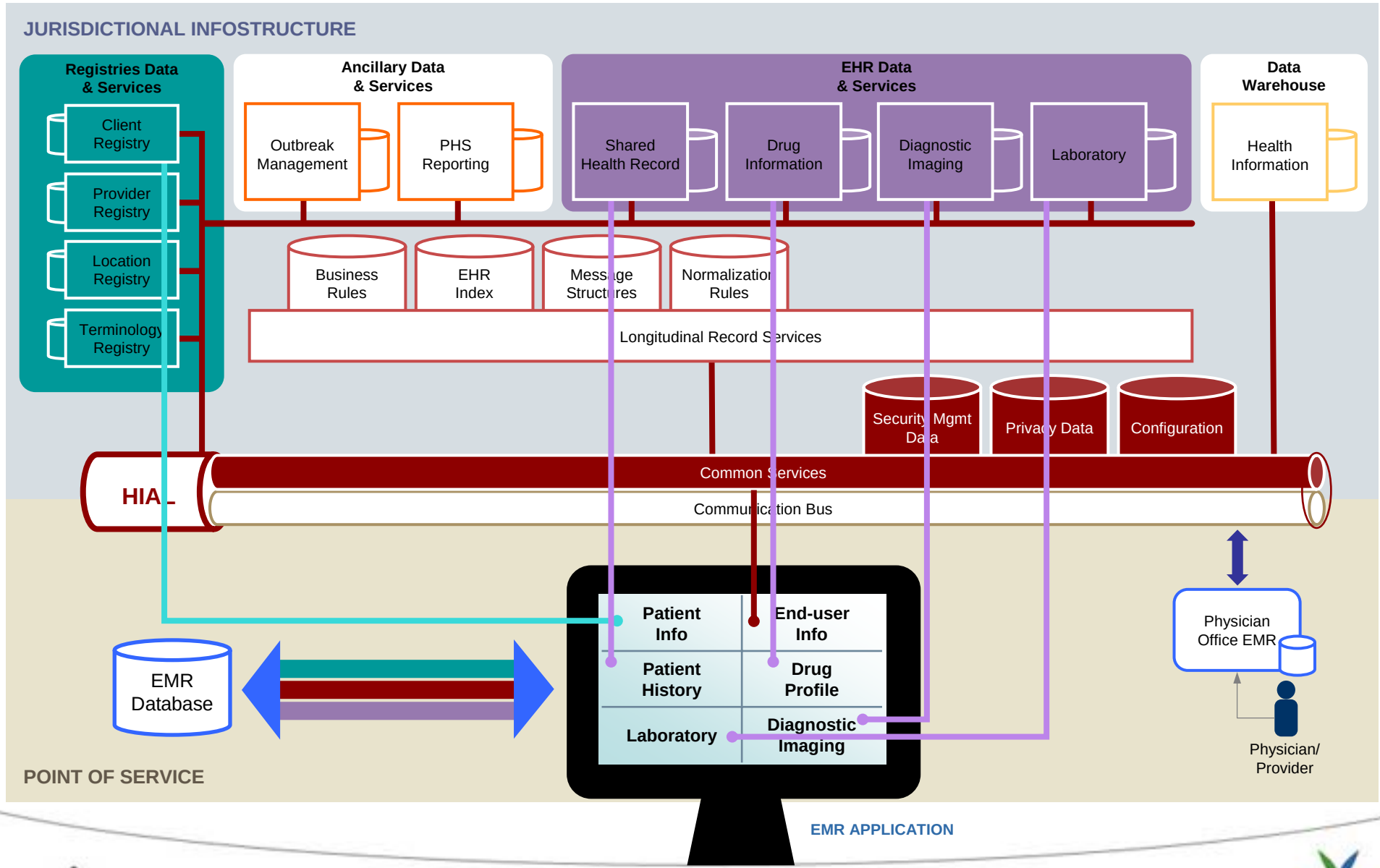
An **Electronic Health Record (EHR)** provides each individual in Canada with a secure and private lifetime record of their key health history and care within the health system. The record is available electronically to authorized health providers and the individual anywhere, anytime in support of high quality care.

This record is designed to facilitate the sharing of data – across the continuum of care, across healthcare delivery organizations and across geographies.

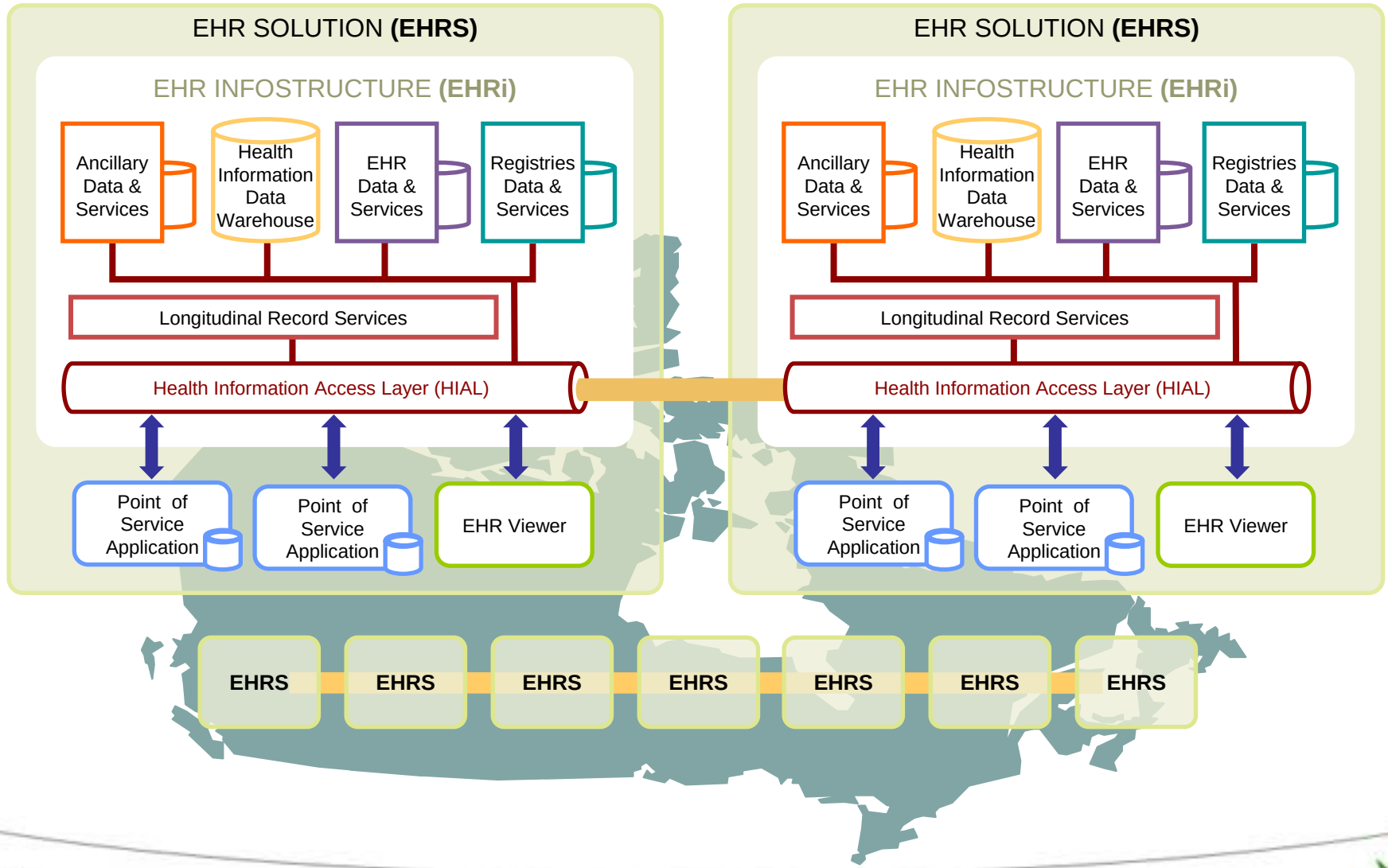
EHRS Conceptual Architecture



End-User Perspective: EMR Application



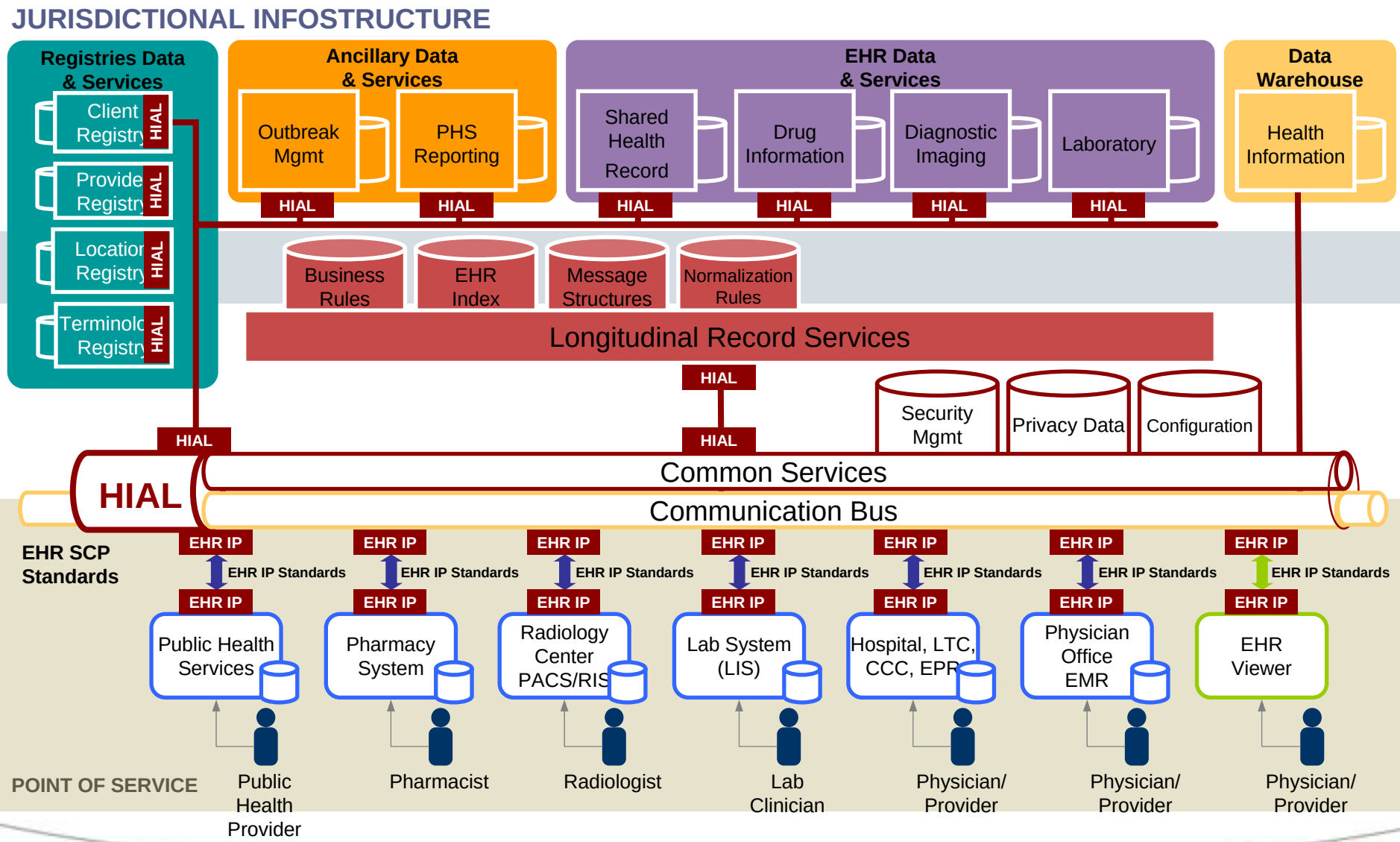
EHRS In Canada
Federated Databases, Peer-to-Peer, Message Based



Standards-based Solutions

- Standardized Architecture
- Standardized Interfaces
- Standardized Data Structures
- Standardized Data Vocabularies
- Standardized Functional Behaviour

EHR Infostructure: Standards Based Connectivity



Standards Investment Portfolio

Architecture Standards

- EHRS Blueprint
- EHR Use Cases
- EHR Data Model
- EHR Services Model
- EHR Interoperability Profiles

Data & Messaging Standards

- eClaims (Primary Care, Oral, Vision, Chiro/Physio, Pharmacy) HL7 v3 (complete)
- Client Registry HL7 v2.4 & HL7 v3 (complete)
- Provider Registry HL7 v3 (complete)
- Drug Information Systems HL7 v3 (complete)
- Laboratory HL7 v3 (in development)
- Diagnostic Imaging/Teleradiology DICOM, IHE XDS-I (complete)
- iEHR Clinical Messaging HL7 v3 (in development)
- iEHR Technical Standards (in planning)
- Public Health Standards HL7 v3 (in development)
- Clinical Terminology Strategy (complete)
- Terminology Standards (SNOMED, LOINC, ICD10-CA, CCI)

Infoway, the Interoperable EHR Agenda and IHE

Leverage IHE integration profiles as much as possible

- DI domain
  - Co-authoured XDS-I content supplement
  - Funded development of XDS-I MESA tool set
  - Driven XDS/XDS-I through the Standards Collaboration Process – declared as a pan-Canadian Standard (with “Stable for Use” designation)
- Client Registry
  - Authoured/funded a change proposal to PIX and PDQ to support our client registry (HL7 v3) messaging standard
  - Funded development of MESA tool set changes
- EHR infostructure
  - Reviewing ITI integration profiles for consideration as pan-Canadian “standards”
  - The EHR Index will comply to the XDS Registry actor…but support event notifications, and other data types

Coordinate with IHE to avoid duplication

- Leverage IHE technical committees to develop new profiles and/or propose changes to existing profiles e.g. support for HL7 v3 messaging, enhance the XDS Registry, participate in the XDS federation discussion
- Leverage MESA tools for conformance testing
- Provide resources to profile development/change proposals through IHE Canada

Conformance for pan-Canadian Standards

Definition of Conformance

- Conformance includes the development of pan-Canadian standards business requirements, the conformance testing against these business requirements, and certification.

Scope

- Functional, message level interoperability, privacy and security, usability
- Infoway Standards Collaborative and the eHealth Collaboratory will share responsibilities for conformance on pan-Canadian Standards
  - Standards Collaborative will undertake the development of business requirements, including the development of conformance statements, for the pan-Canadian approved standards;
  - The eHealth Collaboratory (Collaboratory) will undertake the building of the conformance testing environment, the development of the testing processes and will undertake the actual conformance testing against the established business requirements.

eHealth Collaboratory

Purpose

- The eHealth Collaboratory has been established to provide independent certification and procurement support services to dramatically improve clients' ability to deploy standards-based, interoperable and usable healthcare IT systems

Vision

- Will be nationally recognized as the trusted authority that provides an effective service offering enabling the Pan-Canadian EHR

Collaboratory Key Conformance Test Offerings

- Functionality
  - Do solutions offer the required functionality as specified in the Pan-Canadian standards?
- Interoperability
  - Do solutions interoperate as required? At the message level? At the interoperability profile level?
- Privacy and Security
  - Are solutions adhering to basic privacy and security standards?
- Usability
  - In a clinical setting, are the solutions easy to use, safe and likely to have high adoption?

Collaboratory Services

- Currently developing and will maintain a set of persistent test harnesses and reusable tools
- Will provide web-based interaction with repositories and remote-access toolset
- Vendor's point of service systems will be certified against standardized tests by the Collaboratory - results will be available online
- Jurisdictional EHR systems (the back-end Drug, Lab, DI, etc.) will be conformance tested to ensure they correctly implement the standards

Summary

The Interoperable EHR is becoming a reality in Canada!

- Our messaging and vocabulary strategy, requirements and specifications go beyond departmental integration and are designed to support:
  - Lifelong, longitudinal, patient-centric summary of key clinical data which has value over time – the Interoperable EHR
  - Large scale, loosely coupled, federated systems interoperability requirements using a peer-to-peer message oriented communications model
  - Semantic interoperability between systems

- "Interoperability Profiles" need to move beyond the departmental and tightly coupled systems integration to support an Interoperable EHR set of functions
  - Design patterns of List, Get, Put
  - With registry, consent, privacy/security, audit, decision support, alert, and business process orchestration capabilities
  - XDS registry moving towards a full EHR Index

Thank you!

Website: www.infoway-inforoute.ca

E-mail: dgiokas@infoway-inforoute.ca

Creating Healthy Connections