ALC Resource Matching & Referral Provincial Reference Model
Overview

eHealth Ontario Information Session at ITAC

Thursday, March 11, 2010

Ontario
Cancer Care Ontario

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eHealth Ontario

Agenda

- **Introduction**
- **Background**
- **PRM Development Methodology**
- **ALC Resource Matching and Referral Provincial Reference Model**
  - Leading Practice Overview
  - Business Process and Data Elements
  - Technology, Security and Privacy Overview
- **Questions and Answers**

Introduction

- The Provincial Reference Model (PRM) is a set of provincial guidelines to assist Local Health Integration Networks (LHINs) and health service providers (HSP) with implementation of resource matching and referral (RM&R) solutions. The PRM will help to promote standardized processes and practices for resource matching and referral.

- The PRM focuses on improving Alternate Level of Care (ALC) wait times and is flexible enough to respect local practices, legislative requirements and evolve over time.

- Within each component, guidelines and requirements for implementation of RM&R solutions are provided.

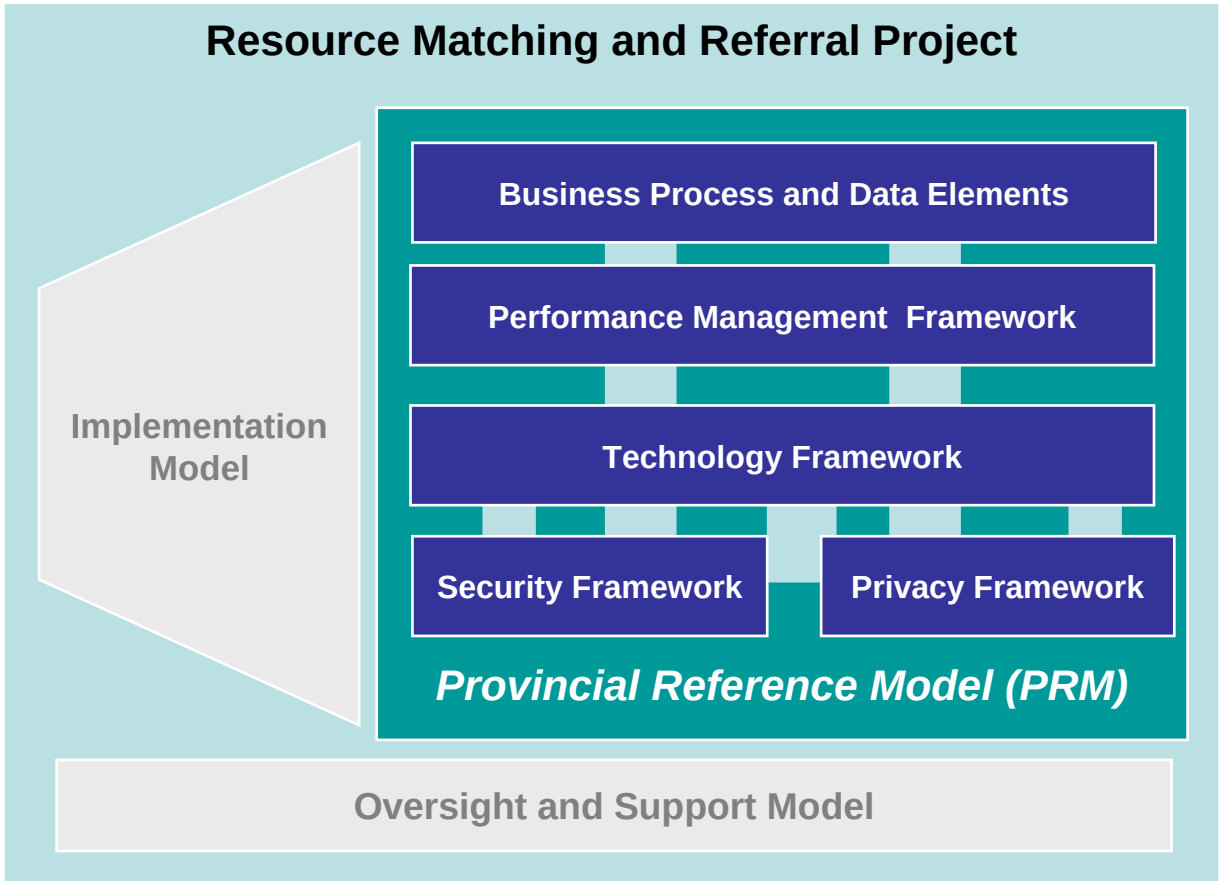
- LHINs implementing RM&R solutions will need to align to the provincial guidelines.

- Vendors with interest in RM&R solutions will want to have a general understanding of the PRM if they are seeking to respond to LHIN/HSPs RM&R solution requirements.

- The purpose of today's session is to provide an overview of the PRM, obtain your general feedback and answer any questions you may have.

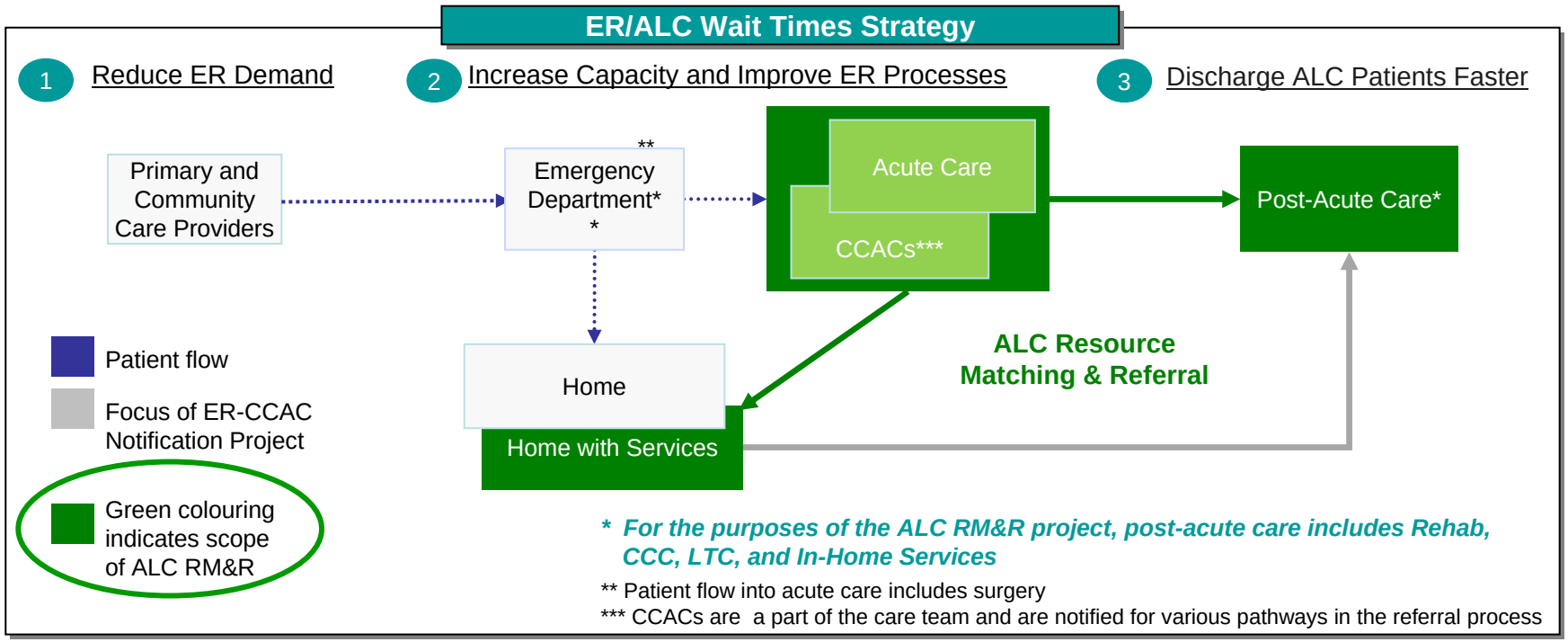
Resource Matching and Referral Project: Provincial Reference Model Project Deliverables

The Resource Matching and Referral (RM&R) Provincial Reference Model (PRM) includes five distinct components represented in the diagram below.



Scope

This project focuses on referrals from the acute to post-acute setting for four specific pathways* and will serve as the foundation for additional referral pathways in the future.

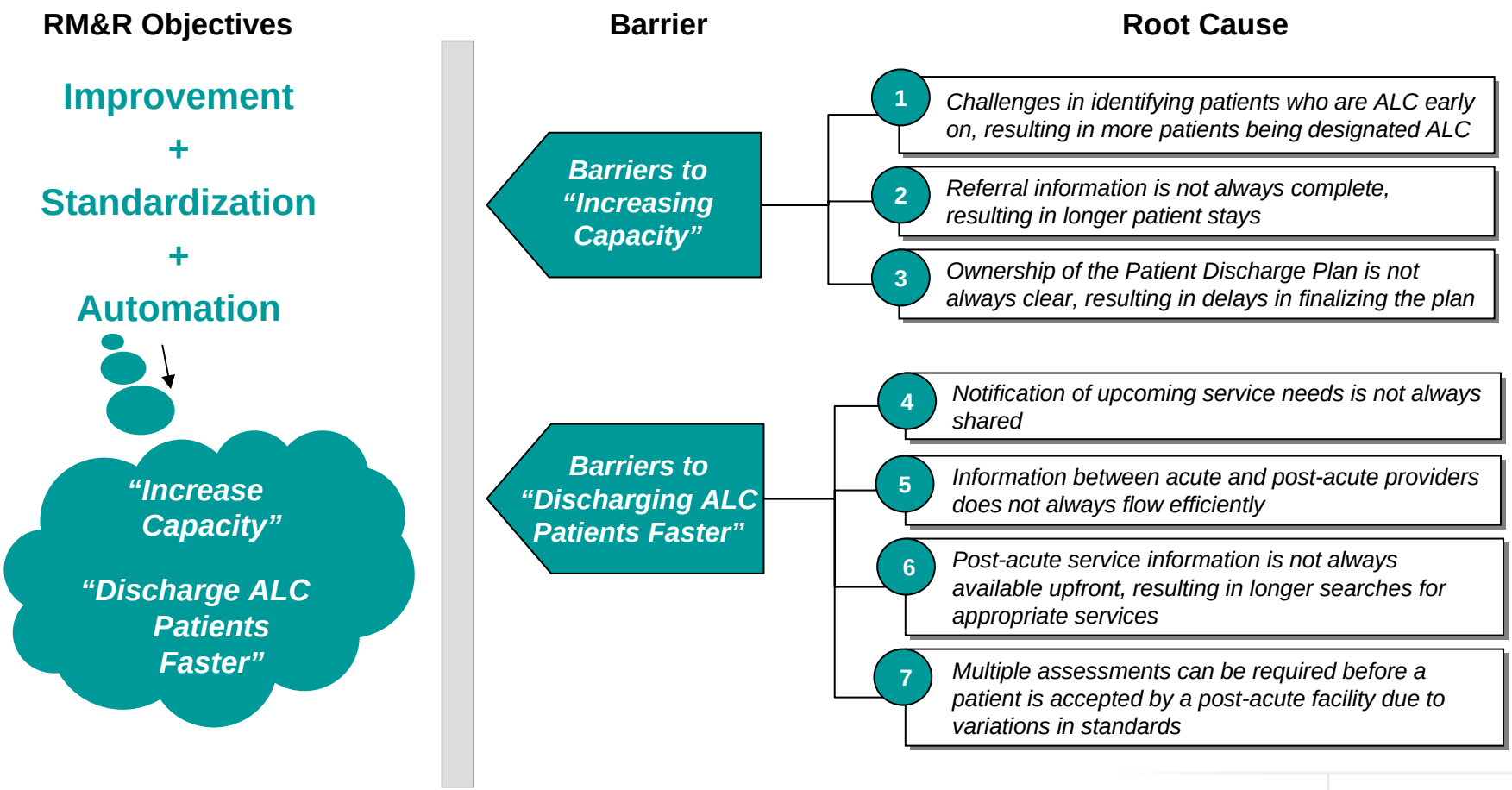


High-level scope across all pathways includes the definition of supporting:

- Business requirements and high-level processes
- Functional requirements for an eReferral solution to support the referral between the source & destination
- A minimum data set including data elements and alignment to the process flow
- A required technology, privacy and security requirements that the RM&R solution must meet
- The performance management Framework to measure the effectiveness of the RM&R process

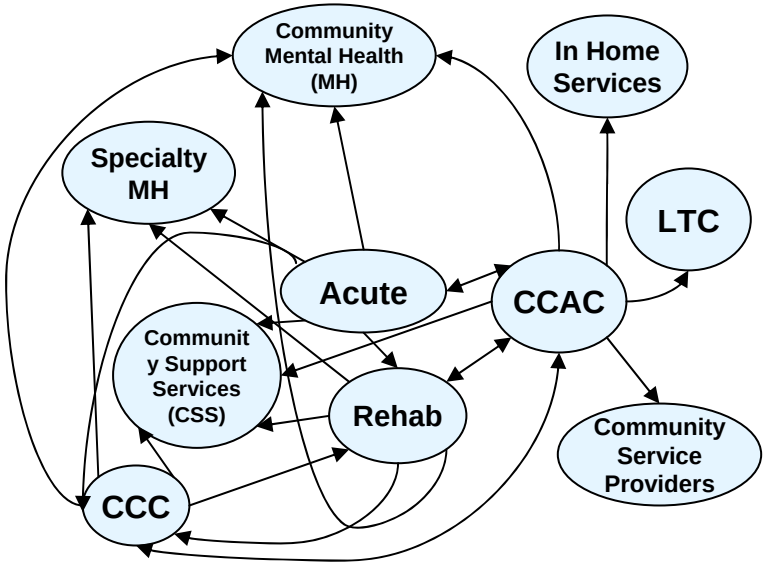
Barriers to Achieving Project Objectives

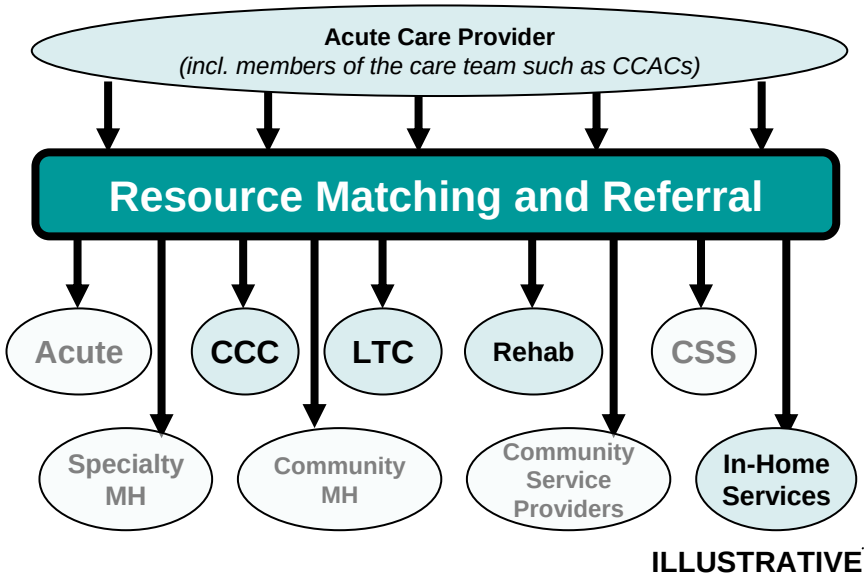
The current state assessment identified several barriers to achieving the RM&R project objectives of increasing capacity in the acute setting and discharging ALC patients more quickly and effectively.



RM&R Future State Vision

The RM&R PRM is built around a streamlined, client-centric business process that can be expanded over time.





Current Issues and Challenges

- Majority of referrals are done via existing referral partnerships
- Limited standardization of the processes, data, and technology to support the referral functions
- Processes and functions are mainly manual based on utilizing paper, phone and fax resulting in re-work, potential data quality issues and delays

Future Vision

- All referrals completed using a RM&R solution
- Common definitions, criteria and processes exist for RM&R
- Planners have near real-time information on discharge destination availability, wait lists and acceptances to support timely discharges to the appropriate LOC.
- Automated processes and functions exist to decrease the processing time for referrals and ALC days and improve overall patient flow

PRM - Guiding Principles (1 of 2)

In addition to the project-level principles, the following guiding principles have served as a foundation for the development of the PRM.

PRM Guiding Principles	
Stakeholder Engagement	• A broad group of stakeholders will be engaged to identify the key elements of the PRM.
	• The RM&R process will be designed with the intent to enhance the current patient experience by considering clinical and business perspectives.
	• Existing or lessons learned from RM&R projects in the LHINs will be leveraged in the development of the PRM.
Business Process and Data Elements	• The PRM will allow for the flexibility to expand in-scope over time.
	• Leading practices should be incorporated into the model to achieve and sustain targeted objectives and avoid merely automating inefficient business processes.
	• The PRM will utilize clinical evidence-based criteria in order to adapt to policy or eligibility changes over time.
	• The model will provide common terminology for related definitions including RM&R.

PRM - Guiding Principles (2 of 2)

In addition to the project-level principles, the following guiding principles have served as a foundation for the development of the PRM.

PRM Guiding Principles	
Performance Management	• Key Performance Indicators (KPIs) will monitor and track improvements in the patient experience and define new opportunities for improvement.
	• Foundational data will be defined and collected by the RM&R solution such that common performance indicators can be defined and reported consistently across the province.
Technology	• Technology will support, not drive, business and clinical needs.
	• The Technology Solution Framework will support standards-based interoperability.
	• The PRM will be aligned to the Ontario eHealth Blueprint.
Privacy	• *Personal Health Information Protection Act* (PHIPA) will be applied to develop the RM&R privacy requirements.
	• Consideration was given to leading privacy practices.
Security	• Relevant privacy legislation should be applied to security standards.
	• Leading security practices from Cancer Care Ontario (CCO) and eHealth Ontario will be leveraged.
	• A balance will be struck between providing actionable security guidance while not being overly prescriptive, in order to provide LHINs the flexibility to implement security measures, as appropriate for their business needs, yet comply with legislative and legal obligations.

PRM Development Approach

The PRM addresses issues identified in the current state assessment with key stakeholder input, in order to develop a patient focused model, built on a common, streamlined high-level business process.

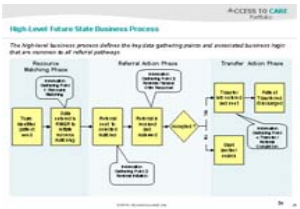
Current State Assessment

Guiding Principles and Scope

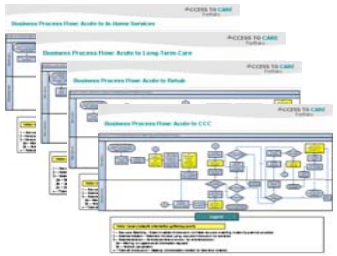
Stakeholder Management Plan

Current State and Scoping

High-Level Business Process



Target Processes by Pathway

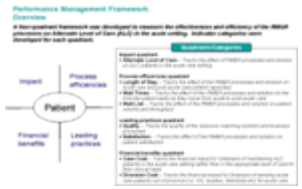


Data Elements by Pathway

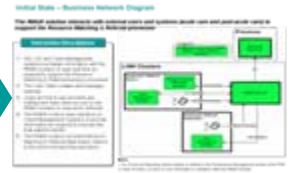
Draft Business Processes and Data Elements

Sub-group Input and Active Participation

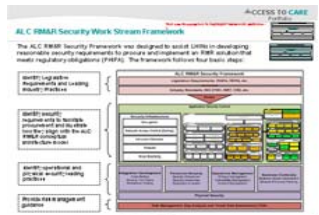
Performance Management Framework



Technology Framework



Privacy and Security Framework



PRM Supporting Components

Sub-group Methodology

The sub-groups were mandated with a common charter and specific objectives relevant to their particular stream of work.

Sub-group	Business Process and Data Elements	Performance Management and Reporting	Technology	Privacy and Security
Objectives	• Provide input on the development of "high-level, future state" business processes and data elements • Validate high-level functional requirements • Validate applicable definitions for the PRM	• Validate proposed Key Performance Indicators (KPIs) and identify additional essential KPIs to be included in PRM • Review and provide input to a reporting strategy to be included in the PRM for performance management of RM&R solutions	• Review and provide input to RM&R conceptual technology models for the PRM • Share information on the present state technology landscape and identify implications to PRM • Share lessons learned from existing RM&R implementations for consideration in PRM • Validate high-level non-functional requirements	• The privacy and security streams of work followed a different model • Content expertise was provided primarily by stakeholders from CCO and eHealth Ontario
Common Charter	• Contribute content expertise or knowledge to inform the PRM • Represent, engage and follow up with colleagues for contribution to components • Review working materials and participate in group discussions during meetings • Act as a point of communication for their respective organizations			
Participants	• 41 participants from various organizations	• 24 participants from various organizations	• 33 participants from various organizations	

Leading Practices for the RM&R PRM

Achieving the benefits of a RM&R solution requires the redesign of business processes with a focus on patient flow and Care Management.

Patient Flow and Care Management

- Care Management is the process that serves as the foundation for effective patient flow and facilitates the identification of the patient's need for care/services across the continuum with a focus at the entry points and in acute and post-acute settings.
- Care Management is **proactive versus reactive** in its approach to patient management.
- Effective Care Management ensures patients have the **right care, at the right time and in the right setting**.
- Care Management functions and processes are enabled utilizing clinical evidence-based criteria for LOC and technology (e.g. Medworxx, InterQual).
- The Care Manager serves as the point person accountable for all the following Care Management functions:
  - **Initial and concurrent clinical review** – focused process to assess LOC utilizing clinical evidence-based criteria to determine proactive discharge planning and identify ALC
  - **Discharge planning** – a structured and collaborative process for the planning coordination of discharge or transfer needs
  - **Care facilitation** – focused process to assess, plan and coordinate patient care throughout their stay, from admission to discharge
  - **Continuity management** – structured support and linkages between the acute setting, home and community
- The Care Manager role could be performed by existing personnel, facilitating the referral (e.g., discharge planners, social workers or case managers) as deemed by LHIN/facility leadership.

Leading Practices for the RM&R PRM

Discharge planning is a key process to be redesigned in order to ensure a proactive approach (limiting the number of hand-offs and delays) and achieve the benefits of a RM&R solution.

Patient Flow and Discharge Planning

- **Discharge planning is one of the key Care Management functions**
  - It is initiated at the time of admission to an acute care setting or prior to admission for elective surgeries.
  - It is a structured and collaborative process for the planning of the discharge or transfer needs of the patient.
  - It involves the early identification of potential discharge needs in order to facilitate the planning to ensure all post-acute care needs of the patient are addressed prior to the discharge and/or transition date.
  - Discharge planning occurs prior to the patient being identified as being ALC for the acute LOC.
  - Multiple discharge options are identified based on the complexity of the patient's needs to avoid delays in the transition process.
  - It ***limits the number of hand-offs and delays*** in the process.
- Evidence-based criteria (e.g., InterQual or Medworxx) is utilized to support clinical judgment when identifying appropriate LOC for transitions and discharge options.
  - Ongoing assessments of the patient using clinical review criteria support clinical judgment in the identification of the appropriate post-acute LOC based on the patient's needs and services required.
- The outcomes of effective discharge planning include:
  - Timely and safe discharge of the patient to an appropriate non-acute facility or to the patient's home
  - Increased satisfaction of the patient and family
  - Continuity of care between the hospital and the home and/or community

Core Elements and Benefits of a RM&R solution

The core elements of a RM&R solution will enable a set of benefits that support the ER / ALC Wait Time Strategy through increased capacity, improved productivity and improved quality of care and patient satisfaction.

Core Elements

Improve Data Flow

- Interface with admission, discharge and transfer (ADT) systems in near real-time to decrease manual entry
- Ability to attach electronic copies of paper-based documents
- Integration of assessment forms and other medical documents into the eReferral
- Ability to develop discharge summary reports and documents
- Provides tracking and reporting tools

Streamline Communication

- Provides estimates of waitlist times for beds/services
- Automatically and electronically communicates patient referral to post-acute providers
- Supports proactive discharge planning by multiple team members
- Tracking and audit of referral communications
- Alerts online post-acute providers of referrals and alerts care managers/discharge planners of responses

Automate Processes

- Supports resource matching to align patient needs to service providers
- Assigns patients to discharge planner /care managers through worklists
- Integrates with clinical evidence-based criteria to support LOC
- Integrates with hospital/clinical/CCAC systems and supports documentation in the system

Benefits

Increase Capacity

- Decrease length of stay (LOS) – acute, intensive care unit (ICU) and emergency room (ER)
- Decrease ALC wait
- Improve response times in the referral process
- Improve inpatient capacity and throughput
- Increase capacity for admissions, ER visits and operating room (OR) cases

Improve Productivity

- Decrease delays and re-work
- Eliminate manual and paper processes
- Decrease multiple hand-offs
- Increase staff productivity and efficiency
- Decrease administrative costs

Improve Quality and Satisfaction

- Improve communication and accuracy in referral information
- Increase patient and family satisfaction
- Improve acute and post-acute provider satisfaction
- Improve comprehensive management reporting (e.g., waitlist and ALC)
- Improve predictive capabilities

Process Flow Assumptions

The following general assumptions provide context across all of the referral pathways and are required to support the implementation of the RM&R solution.

Referral Step Timing

- All business processes begin with the client need identified* and end with services provided.
- The process flows are focused on moving the patient from acute to post-acute settings for the four in-scope pathways.
- The referral is initiated as soon as possible during the inpatient admission, but before an ALC designation.
- The Community Care Access Centre (CCAC) is notified early in the process of the need for an assessment, when appropriate.

Process Ownership

- Process step ownership will be determined collaboratively by LHIN/ facility leadership.
- Care team members in the acute setting (hospital, CCAC) collectively manage the referral process.
- In some LHINs and hospitals, the CCAC case managers support all discharges that require a referral and this will remain unchanged.

Solution Access and Integration

- All team members responsible for the client's care will have at least viewing ability in the RM&R solution.
- All team members responsible for completion of (or contribution to) the referral should have viewing abilities in supporting systems and appropriate access to the RM&R solution.
- Users have access to any of the documents, which they will need to attach to the referral.
- The RM&R solution is integrated with hospital information systems and CCAC information systems in real-time or near real-time.
- Both sending and receiving organizations are live with a RM&R solution.

Compliance

- All legislative requirements remain unchanged.
- Physician consult processes/requirements remain unchanged.

** Client need identified occurs after assessments (e.g. eligibility, functional) have been completed and the post-acute LOC has been determined.*

Unique Features for Each Pathway

While the high-level eReferral process has been standardized around three phases, each pathway also has unique features that will need to be supported by the RM&R solution.

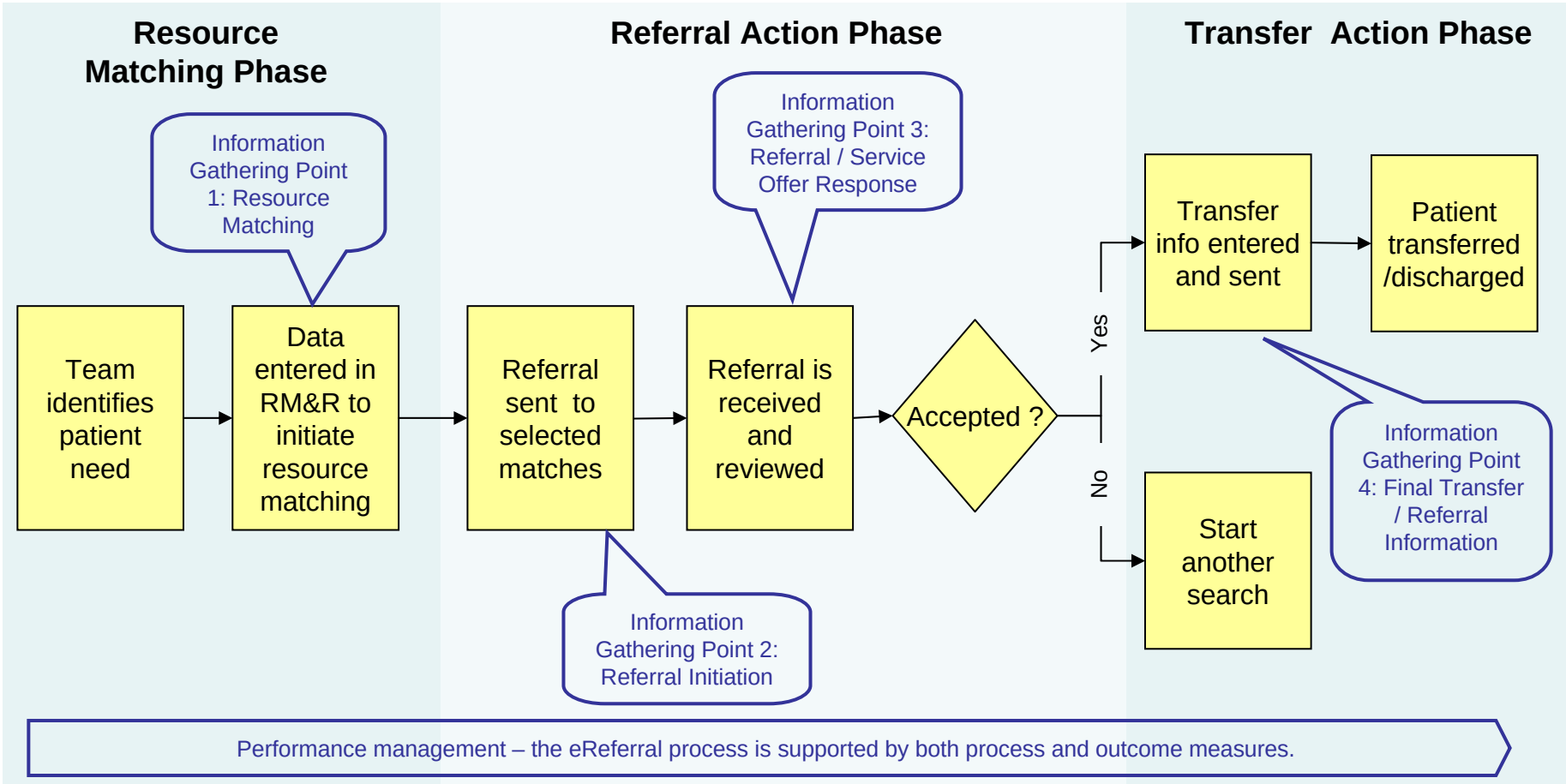
	Rehab / CCC	LTC	In-Home Services
Business Process Assumptions	• The CCAC is involved early in the process, where applicable (e.g., in some LHINs and hospitals, the CCAC case managers support the Acute to Rehab/CCC pathway).	• The CCAC is mandated to manage patients' placement in LTC.	• The CCAC is mandated to manage and support the Acute to In-Home Services referral pathway, including management of Service Provider contracts. • Resource matching for In-Home Services is performed and referrals sent according to existing contract schedules. • A client may be discharged from an acute setting before services are arranged or available through a waitlist.
Time Frames	• A referral should be sent from an acute setting once a need is identified, but at least three to five days ahead of an anticipated discharge. • Receiving facilities should respond to a referral request within one to two business days.	• A referral should be sent once a need is identified, but at least three to five days ahead of anticipated discharge. • Receiving facilities should respond to a referral request within five days*. • Clients should respond to a bed offer within 24 hours.	• A referral should be sent once a need is identified, but at least one to two days ahead of an anticipated discharge. • Receiving providers should respond according to contract schedules.

Unique Pathway Steps	• Rehab and CCC processes are identical, with minor variations in data collected at the information gathering points.
	• Rehab and CCC processes allow for the conditional acceptance of referral subject to patient suitability for transfer
		• The LTC process includes the following unique elements:
		  • Reassessment for patients who have been on the waitlist for six months
		  • Client choice and ranking
		  • Option for the client to decline a bed offer
			• The In-Home Services process includes the following unique elements:
			  • Terminology to support a service offer before the referral is sent
			  • An additional waitlist opportunity before a service offer is sent
			• Minimal information, with no identifying information, is sent with the service offer and the bulk is sent with the actual referral.

** Legislated by province*

High-Level Future State eReferral Process

The high-level eReferral process is common to the four in-scope pathways and includes three phases that serve as the basis for the other work streams.



Data Elements

Common data elements have been defined for each information gathering point and will be aligned to the Ontario eReferral specification

	Pathway		Information Gathering Point Description
Information Gathering point	**Rehab, CCC, LTC**	**In-Home Services**	
1	**Referral Resource Matching**	**Referral Resource Matching**	• Submission of the minimum information is required to initiate the resource matching process and identify potential suitable service providers. Information includes: referral type, required service, patient age and gender.
2	**Referral Initiation**	**Service Offer**	• Initiation of the actual referral using the minimum data set is required to make a referral decision. Information includes: expected service start date, length of stay, diagnosis, medical history and treatment.
3	**Referral Response**	**Service Offer response**	• Submission of the response to the referral request • Information includes: an accept, wait list or decline decision, reason for decision and estimated wait time.
4	**Transfer Information**	**Referral Completion**	• Submission of final information is required to transfer the patient to the ALC setting. Information includes: emergency contact information, physician information and discharge information.

Acute to Rehab: Definition and Scope

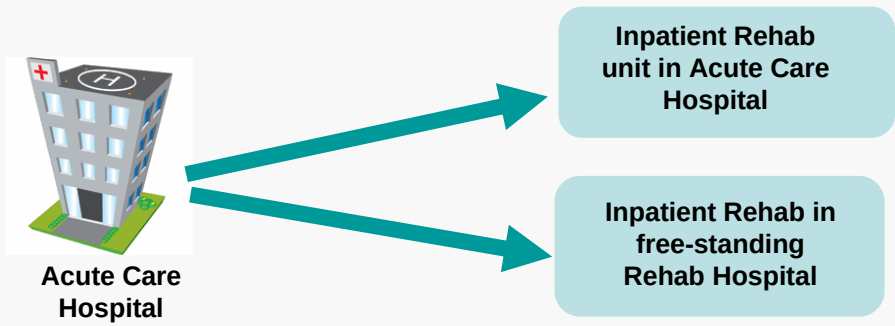
Definition: Rehab

•A progressive, dynamic, goal-oriented and often time-limited process, which enables an individual with an impairment to identify and reach his/her optimal mental, physical, cognitive and/or social functional level. Rehabilitation provides opportunities for the individual, the family and the community to accommodate a limitation or loss of function and aims to facilitate social integration and independence.
Source: GTA Rehab Network, Rehab Definitions Conceptual Framework April 2008, http://www.gtarehabnetwork.ca/downloads/rehab-definitions-conceptual-framework.pdf

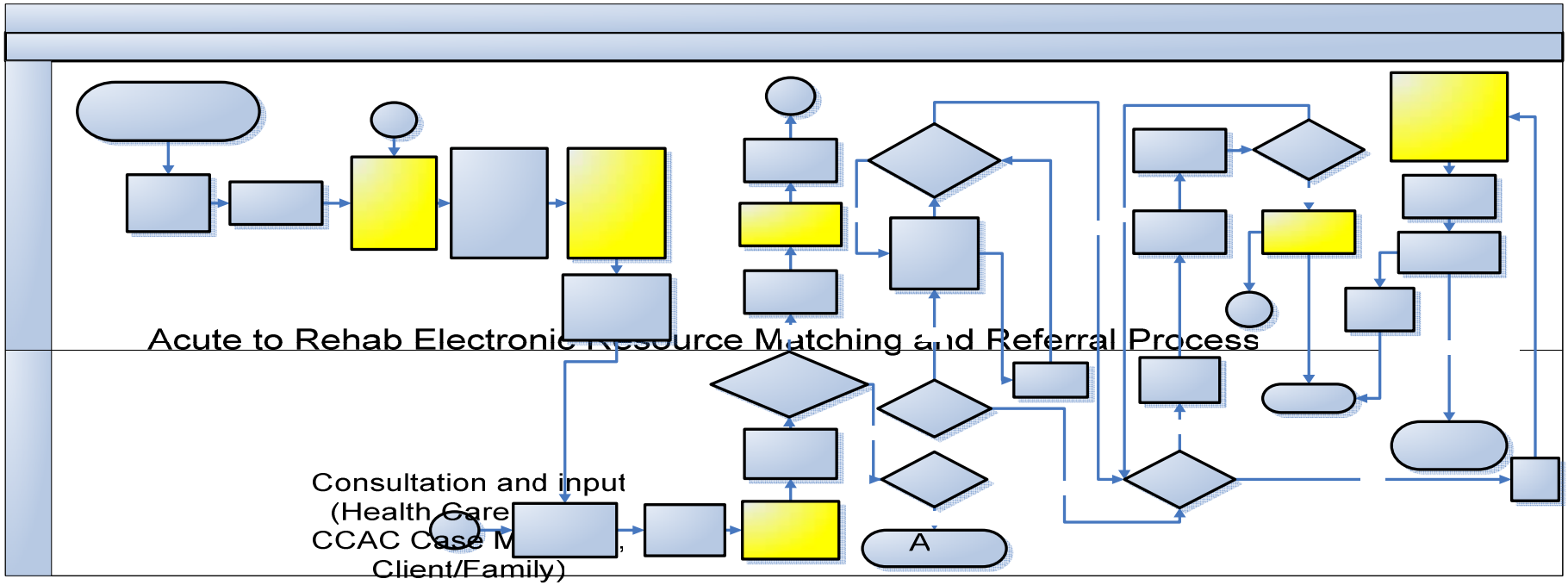
Scope

•The acute to Rehab pathway encompasses the movement of a patient from an acute, inpatient adult medical, surgical or intensive care /step down unit bed to an inpatient rehab bed, in either a free-standing facility or a unit in the current or other hospital.

•The pathway does not include patients moving from obstetrics or mental health.



Acute to Rehab Business Process Flow



* Bed available refers to whether a bed is available for the client, after bed matching has been performed

1 – Resource Matching - Submit sufficient information to initiate resource matching to identify potential providers

2 – Referral Initiation - Referral is initiated using required information for a referral

3 – Referral decision – Referral destination enters the referral decision

3a – Missing or supplemental information required

3b – Referral cancellation

4 – Transfer Information – Balance of information needed for transfer is entered

Referral Statuses

Referrals may pass through a number of statuses which identify progress through the referral life cycle. Statuses are defined by the stage in the business process. Recommended statuses have been identified by the Business Process and Data Elements Sub-group and are provided as a guide to LHINs as they develop statuses in their own RM&R solution.

Example of referral status changes:

Submitted → New → In Progress → Accepted – Bed Available → Complete

Referral Statuses

Status	Definition
Incomplete	The sending organization has created a referral and saved it, but has not yet submitted it to any recipient organization(s)
Submitted	The sending organization has completed and sent the referral to one or more recipient organizations
New	The recipient organization(s) has received a new referral
In Process	The recipient organization is working on the referral
Send-back	The recipient organization is requesting additional information about the referral in order to complete referral processing
Accepted-Bed available	A recipient organization has received a referral and responded by accepting the referral
Accepted-Conditionally	A recipient organization has received a referral and responded by accepting the referral if an identified condition is met
Declined	A recipient organization has declined the referral
Accepted-Wait list	A recipient organization has accepted and the client has been offered a wait list placement
Revised	The sending organization has updated the referral information or selected to terminate an “On Hold” status
On Hold	The sending organization has temporarily suspended action on the referral
Cancelled	The sending organization has cancelled a referral due to a change in client needs
Deleted	The sending organization has deleted a referral created in error
Complete	The client has been accepted to a provider facility and discharged from the source facility

Functional Areas Overview

A series of functional requirements have been defined and grouped into categories to identify the functionality required by the RM&R solution to support business needs.

Number	Area	Description
1	General	• Define general system functionality to support RM&R
2	Referral Origination and Routing	• Define how referrals are initiated and are moved along pathways
3	Referral Owner	• Support the identification and maintenance of a referral owner
4	Delivery Mechanisms	• Support the various ways a referral or notification can be delivered
5	Support for Referral Business Processes	• Define functionality to support printing, setting tolerances for alerts and assigning priorities to referrals
6	Resource Matching	• Support the identification of service providers based on client's needs and/or preferences
7	Catalogues	• Define the information about services available from each provider
8	Referral Information	• Support the capability to capture and relay required information within a referral
9	Attachments	• Support the handling of attachments to referrals of various types
10	Transparency	• Define the ability for users to view historical elements of a referral
11	Wait List	• Define functionality to support the maintenance of wait lists
12	Auditing	• Define time stamping and user history functionality to support auditing
13	Online Help	• Define the help features required to support user needs
14	Reporting	• Define the reporting capabilities required to enable effective operational reporting within the solution

General Assumptions

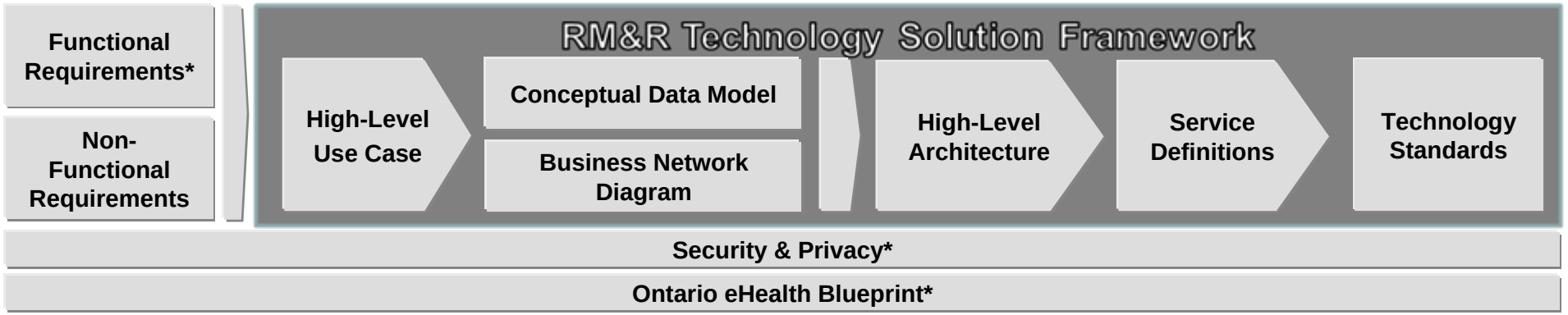
The technology component of the PRM has been defined in the context of the following assumptions:

General Assumptions

- Near real-time data exchange is required between systems.
- Data entry is minimized via interoperability of business applications related to the RM&R process.
- The solution design must align to the PRM.
- In-scope referrals will be fully managed in the RM&R solution.
- Service Level Management and Wait List Management are inputs into the RM&R process and are not managed within the RM&R solution.
- LHINs are being encouraged to group together for implementation purposes for RM & R.
- A single instance of the RM&R solution will be deployed in a LHIN cluster.
- Provincial reporting for RM&R will be facilitated through existing systems enabled by a provincial agency.
- RM&R solution supports the reporting of the performance management indicators related to ALC.

RM&R Technology Solution Framework

The RM&R Technology Solution Framework consists of the following:



- **Functional Requirements*:** The RM&R functional requirements provide input into the Technology Solution Framework and support business processes are driven by the business needs.
- **Non-Functional Requirements:** A list of solution constraints and quality indicators that support the business requirements. Along with functional requirements these requirements provide the foundation for the technology solution.
- **Technology Solution Framework:** Outlines the future solution in terms of the application and technology required to support it.
  - **High-Level Use Case:** A high-level description of the RM&R solution behaviour.
  - **Conceptual Data Model:** Conceptual representation the relationships between data elements within the RM&R solution
  - **Business Network Diagram:** Conceptual representation of where the RM&R solution sits in the universe and how it interacts with different entities.
  - **High-Level Architecture:** A conceptual representation of the RM&R solution
  - **Services & Definitions:** Listing of all Technology Services identified in the High-Level Architecture
  - **Technology Standards:** Listing of relevant Technology Standards for Services identified in the Technology Solution Framework. Technology standards will be utilized as the baseline for all practical delivery of conceptual solution.
- **Security & Privacy*:** Security measures and Privacy principles will be incorporated at all stages of the solution deliverables.
- **Ontario eHealth Blueprint*:** The Ontario eHealth Blueprint provides a future vision for RM&R solution alignment.

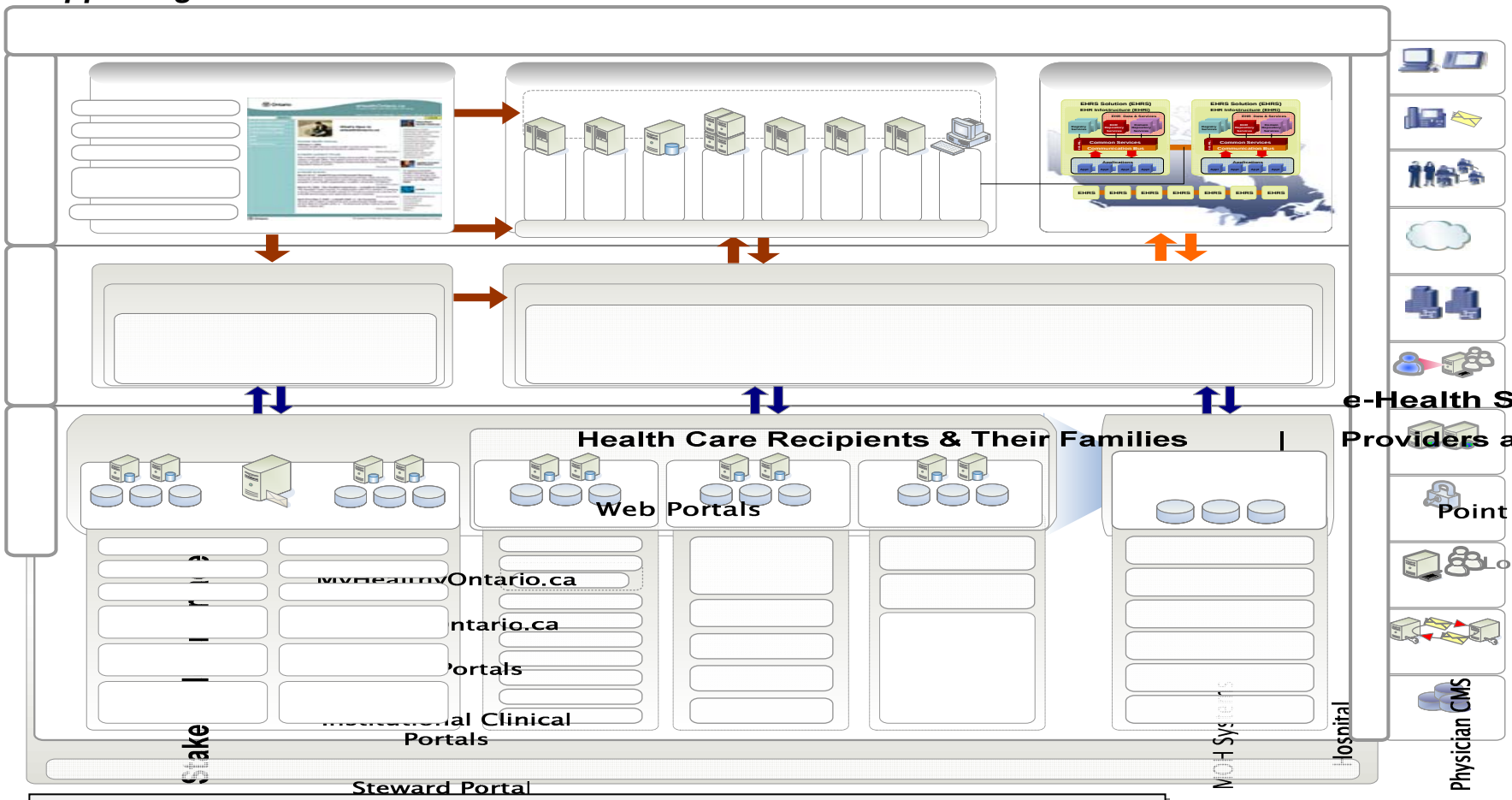
Key Current State Themes and Recommendations

Numerous issues in the current referral process were identified as part of the current state assessment, each lending insights into the future state of RM&R technology in the province.

Key Themes	Recommendations
Interoperability	• The RM&R solution should be capable of integration with Health Information Systems (HIS), Case Management Solutions and Clinical Information Systems (CIS) in order to reduce manual data entry and minimize the risk of data input errors • The RM&R solution should utilize Health Level 7 (HL7) v3.x messaging standard • Use of the Ontario eReferral Specifications (developed by eHealth Ontario) for Terminology usage and standard message formats
LHIN Clusters	• LHIN clusters should be aware of parallel LHIN cluster activities (e.g. Diagnostic Imaging/Picture Archiving and Communication System (DI/PACS), regional HIAL) and determine how they may affect an RM&R implementation • LHIN clusters need to implement a single instance of the solution to realize operational cost savings • The RM&R solution must provide all RM&R relevant services not available in the LHIN cluster at the time of implementation
RM&R Solution Functionality	• The Provincial Reference Model is technology and system agnostic and RM&R solutions may be composed of single or multiple applications
Alignment to Ontario eHealth Blueprint	• Provincial specifications must be leveraged • In the absence of provincial services, LHIN clusters will be required to provide the services locally, but the design should prepare for the use of provincial services in the future (e.g. design for the future) • There is a road map of provincial services, none of which are currently available for general use • The RM&R solution should utilize regional and provincial services as available to ensure that the solution design align for integration in the future
Design	• Design for Future State • Design for flexibility (e.g. No hard coding, no point-to-point integration)

Ontario eHealth Blueprint

The Ontario eHealth Blueprint is a future vision for enabling electronic health records and supporting services in Ontario.



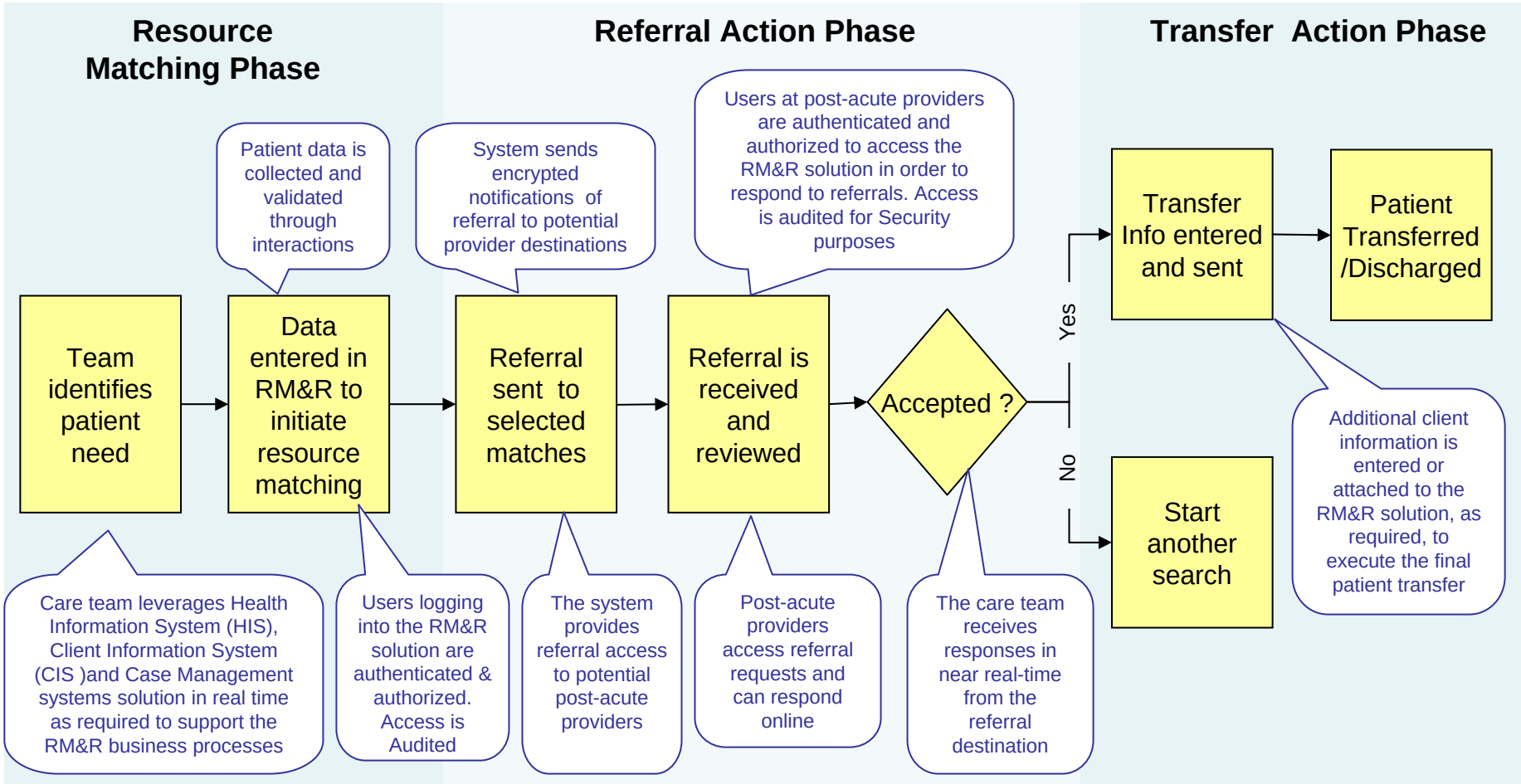
Notes

RM&R solutions must align to the Ontario eHealth Blueprint

- In the future state, RM&R will utilize provincial services as they become available.
- RM&R solutions must be designed for interoperability in order to utilize components defined in the Blueprint.

eReferral Process Enablement

The RM&R Solution supports the business process through the three phases of the eReferral by verifying and validating the referral information.



Security services and functions enable the eReferral Business Process by ensuring personal health information is adequately protected as mandated by legislative requirements (i.e. PHIPA).

RM&R Security Framework

The RM&R security framework was designed to assist LHINs in developing reasonable security requirements to procure and implement a RM&R solution that meets regulatory obligations (i.e. PHIPA) and follows industry leading practices.

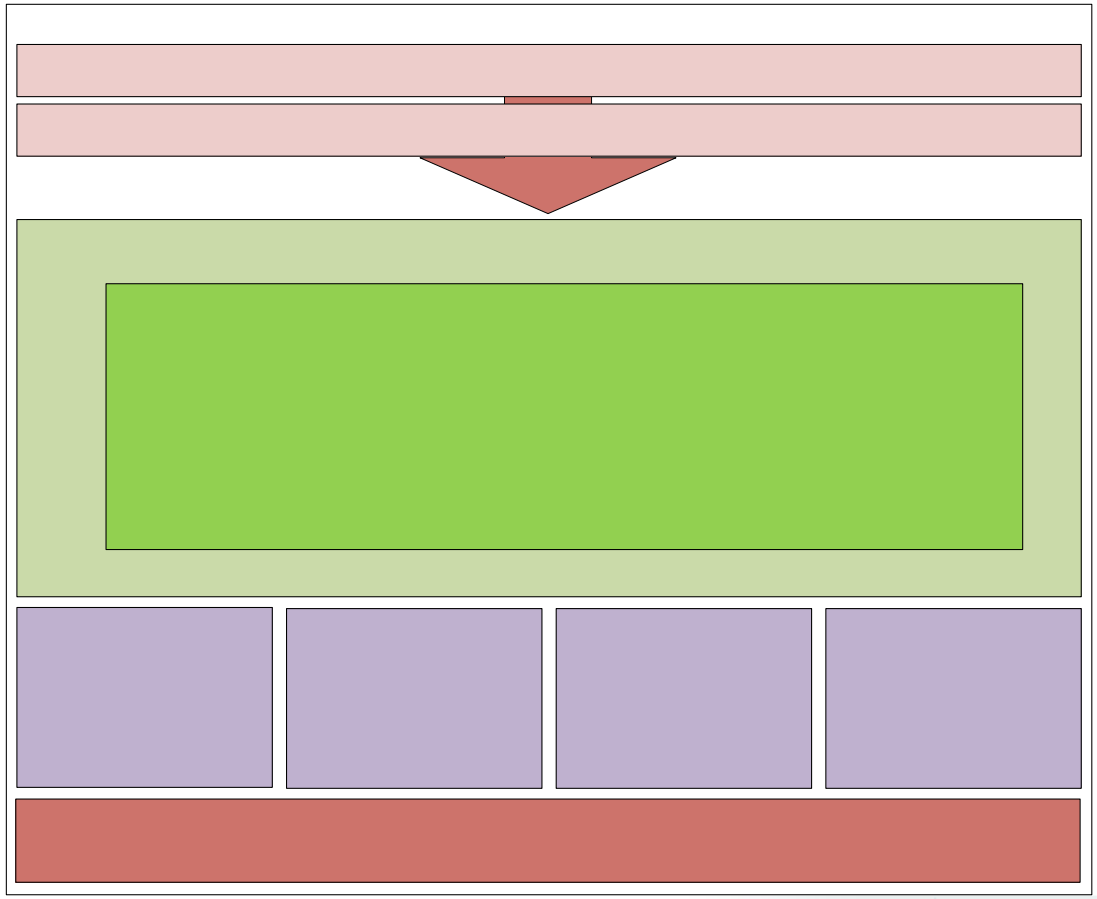
Identify legislative requirements and leading industry practices

Identify security requirements to facilitate procurement and design

Illustrate how the requirements align with the RM&R conceptual architecture model

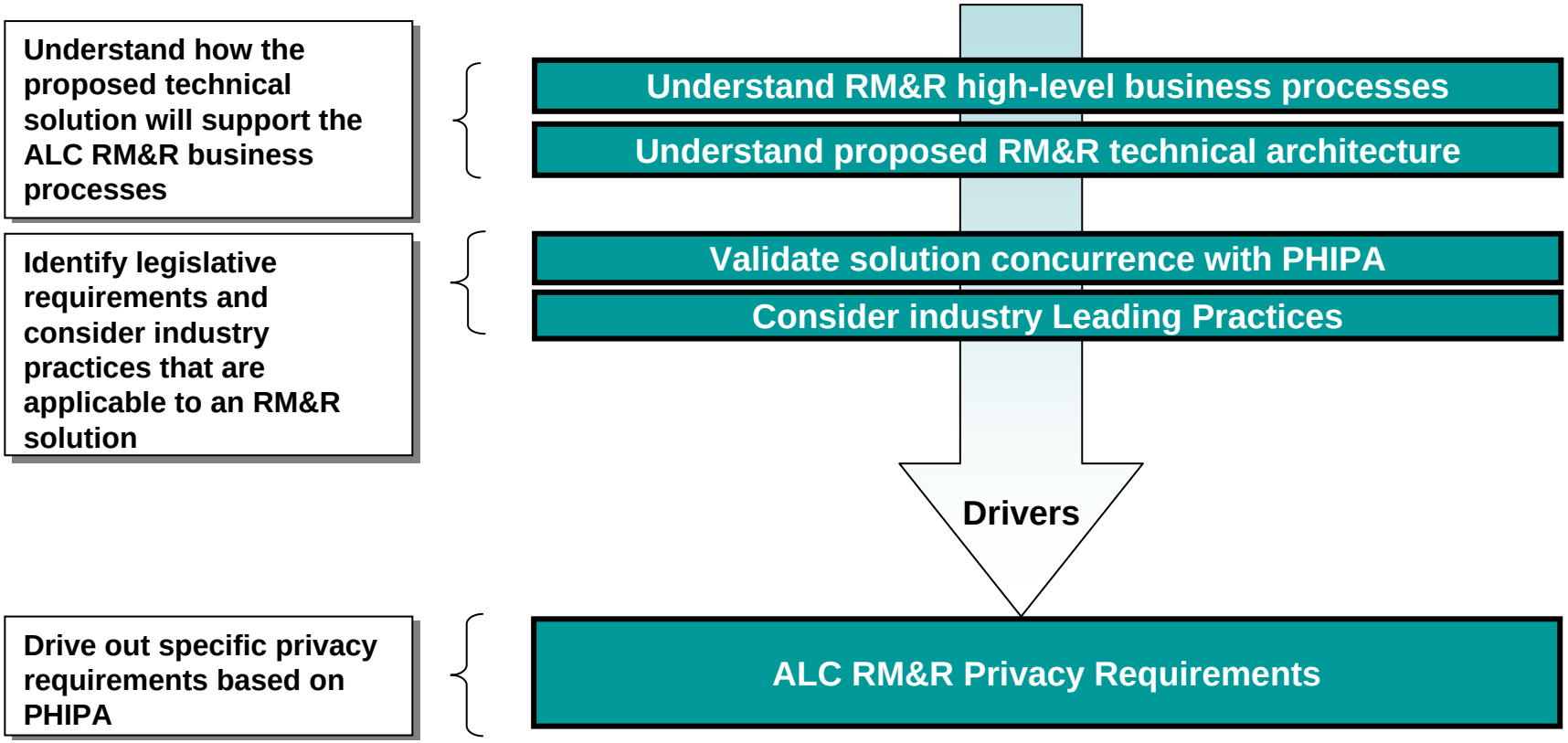
Identify operational security leading practices

Provide risk management guidance



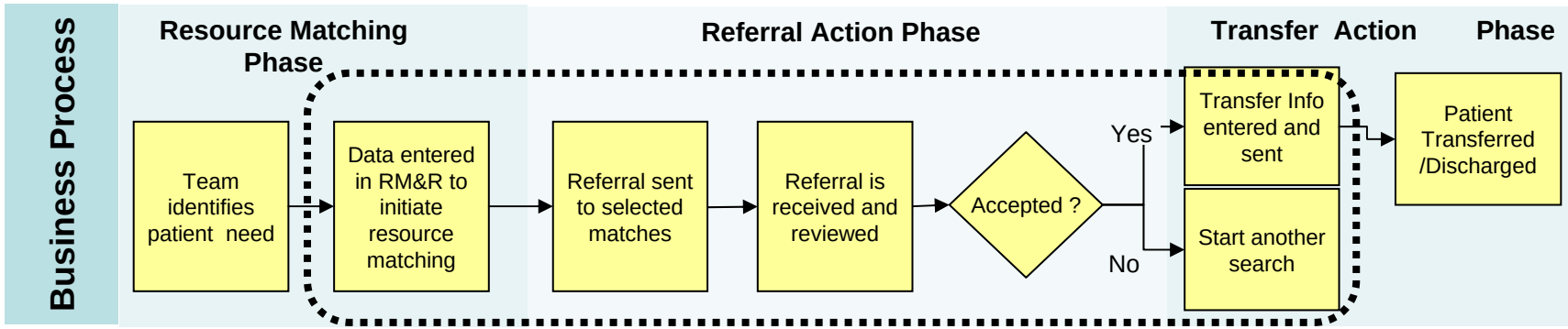
Privacy Framework

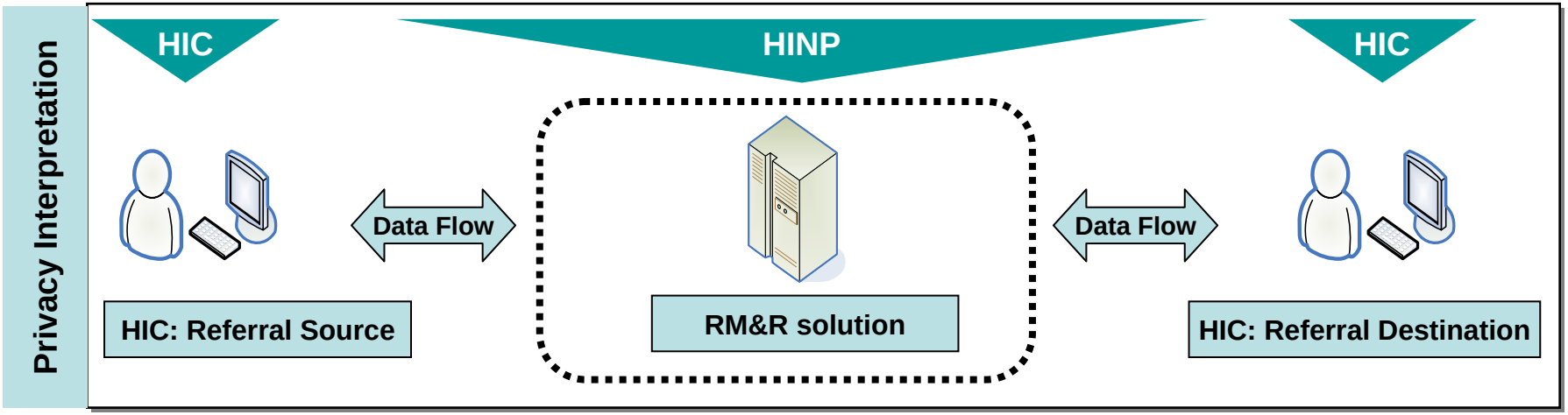
The ALC RM&R privacy framework was designed to outline PHIPA privacy requirements for LHINs or LHIN clusters to consider when implementing an RM&R solution.



Support for eReferral Process Enablement

The privacy framework interprets ALC RM&R business processes according to PHIPA authorities by identifying the privacy roles and how Personal Health Information (PHI) will be used in these roles. Once the roles have been identified, privacy requirements that are applicable to a Health Information Network Provider (HINP) are addressed to ensure compliance.





High-Level Use Case Model

The High-Level Use Case Model defines high-level functionality that must be included in any RM&R solution.

High-Level Core Functionality

Resource Matching

The process of determining which facilities/ providers offer the programs and services required to meet the patient/clients specific needs within the identified LOC.

Manage Referral

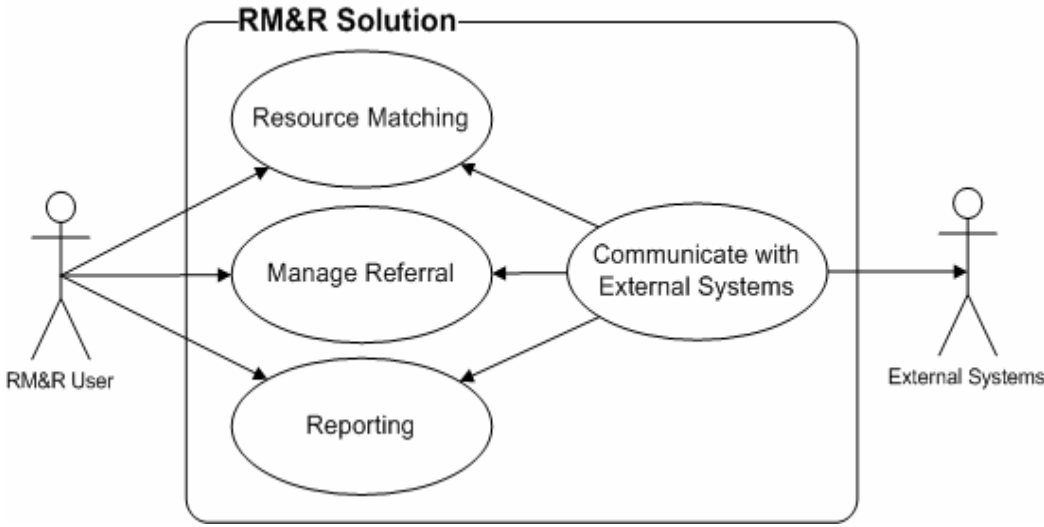
A referral directs a patient/client from a source caregiver to a target caregiver (health professional or institution), recommending the type and LOC required by the patient in a secure and efficient manner. The referral management process includes creating, sending, revising, updating and responding to a referral.

Reporting

The RM&R solution is required to provide reporting capabilities local to the solution.

Communication with External Systems

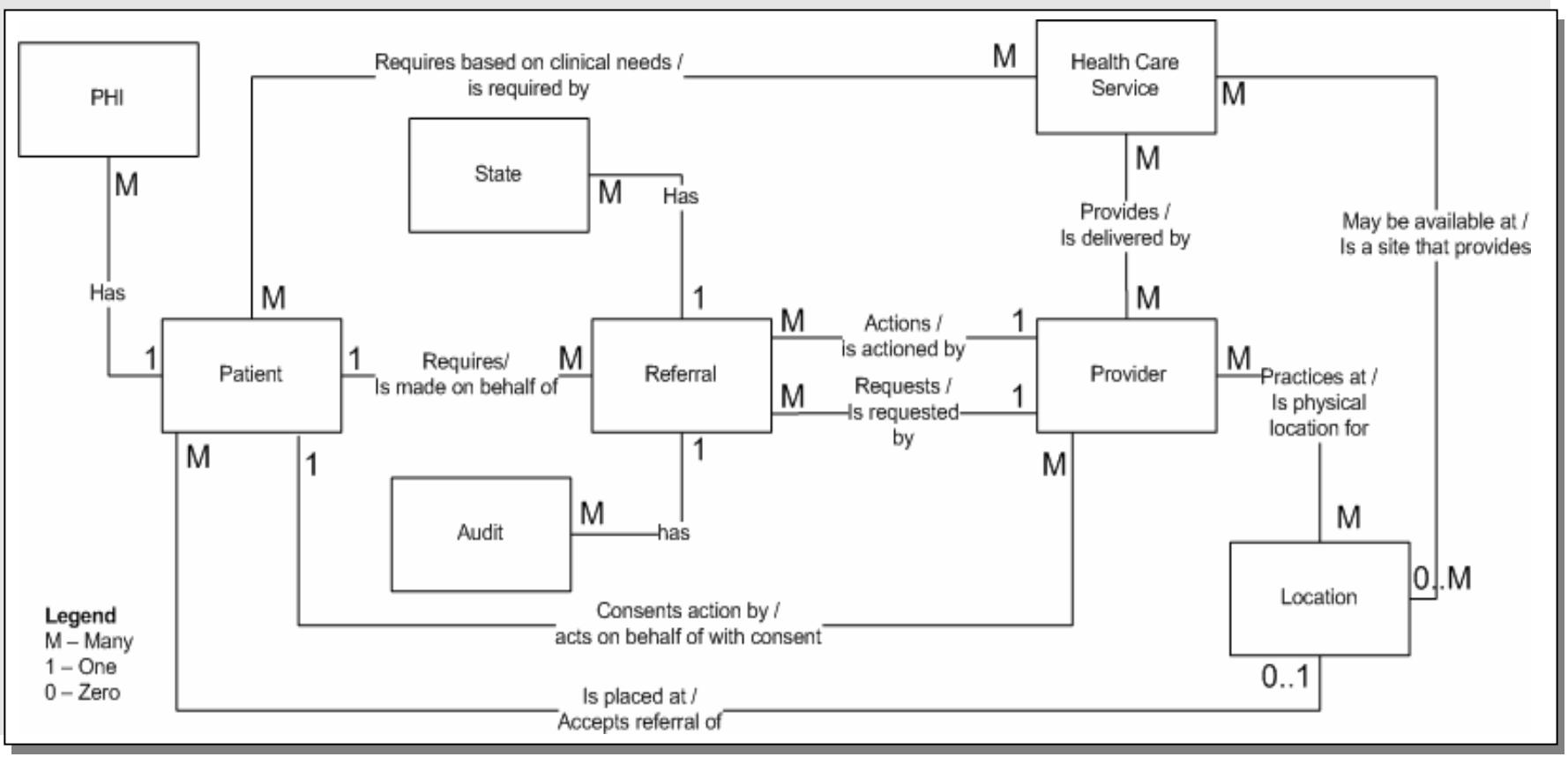
The RM&R solution communicates with external systems such as HIS, CCAC Information Systems, Provider Information Systems, external reporting and registries, as required, to complete the referral process.



Notes:
Wait List Management & Service Volume Management are not in scope for the RM&R Solution.

Conceptual Data Model

The RM&R solution must support the Conceptual Data Model, entities and relationships as defined below.



Notes
1. Providers can be individuals or organizations
2. State is both the state and status of the referral (as per the business definitions)
3. Consent is represented by the patient/provider relationship

RM&R Solution Evolution

Since many of the Ontario eHealth Blueprint components are unavailable today, the RM&R solution should evolve from a LHIN clustered "localized" solution into a fully interoperable solution aligning to the blueprint.

RM&R Initial State Solution → **Solution Evolution** → **RM&R Future State Solution**

RM&R Initial State Solution

- The **four in-scope RM&R referral pathways are enabled** by the RM&R solution. The RM&R solution is scalable and flexible to potentially support all referral pathways.
- RM&R is **enabled within a LHIN cluster.**
- **Integration with** HIS and Case Management systems **for ADT information exchange.**
- The **RM&R solution provides all required functionality** not available via provincial services.
- **Reporting functionality is available within the RM&R solution** for facility and LHIN-level operational reporting and will be made available for interim provincial reporting.
- Client, provider, location & user **information is validated within the RM&R solution**,
- **Nomenclature is defined within the RM&R solution** to handle terminology translation with HIS, CIS and Case Management systems.

RM&R Future State Solution

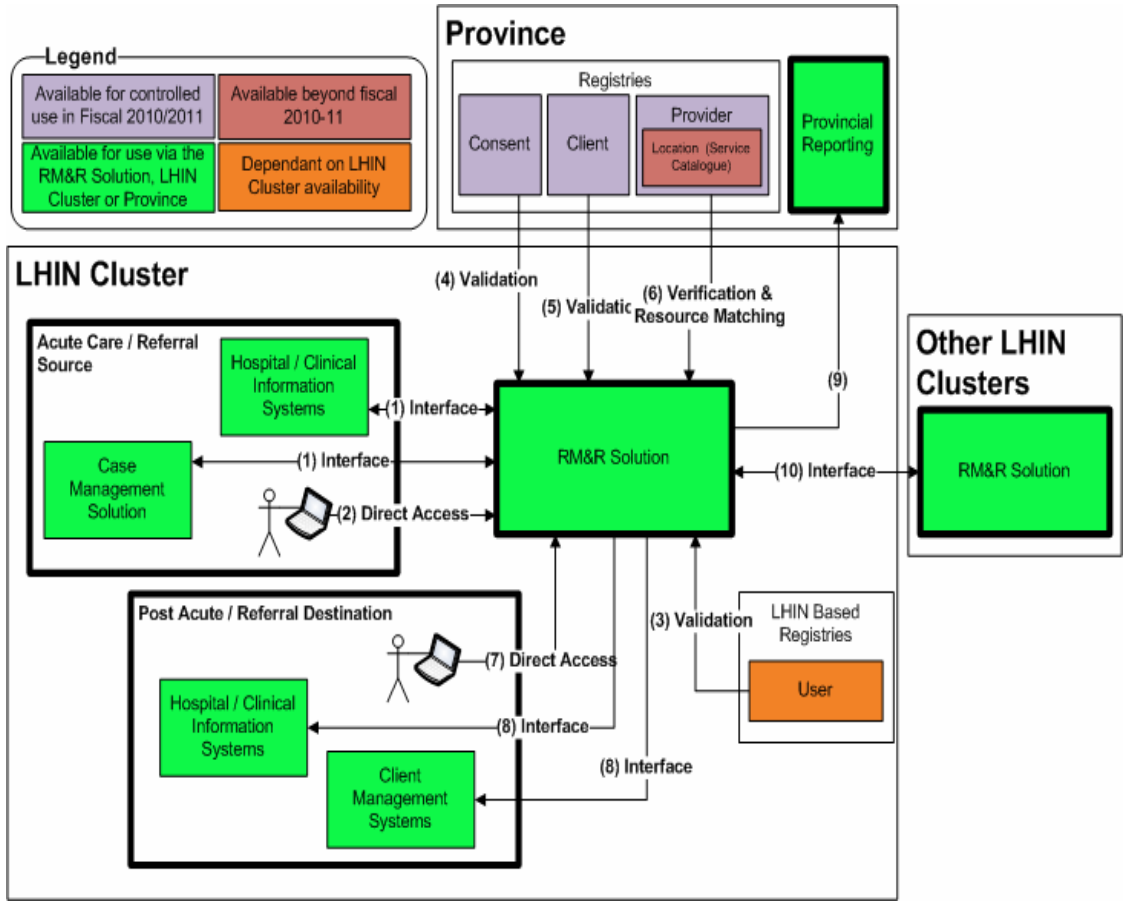
- RM&R is **enabled throughout** Ontario.
- **Enhanced integration** with HIS, CIS and Case Management systems.
- RM&R Solution **functionality is enabled by Provincial & Regional** Services, as defined in the Ontario eHealth Blueprint.
- In addition to the Initial State the **RM&R solution feeds a provincial performance management and reporting**.
- Client, provider, location & user **information is validated against regional or provincial Registries.**
- **Nomenclature is defined within a regional or provincial service** to handle terminology translation with HIS, CIS and Case Management systems.

Future State – Business Network Diagram

The RM&R solution uses Provincial and Regional services for validation and authentication and a provincial solution for performance management.

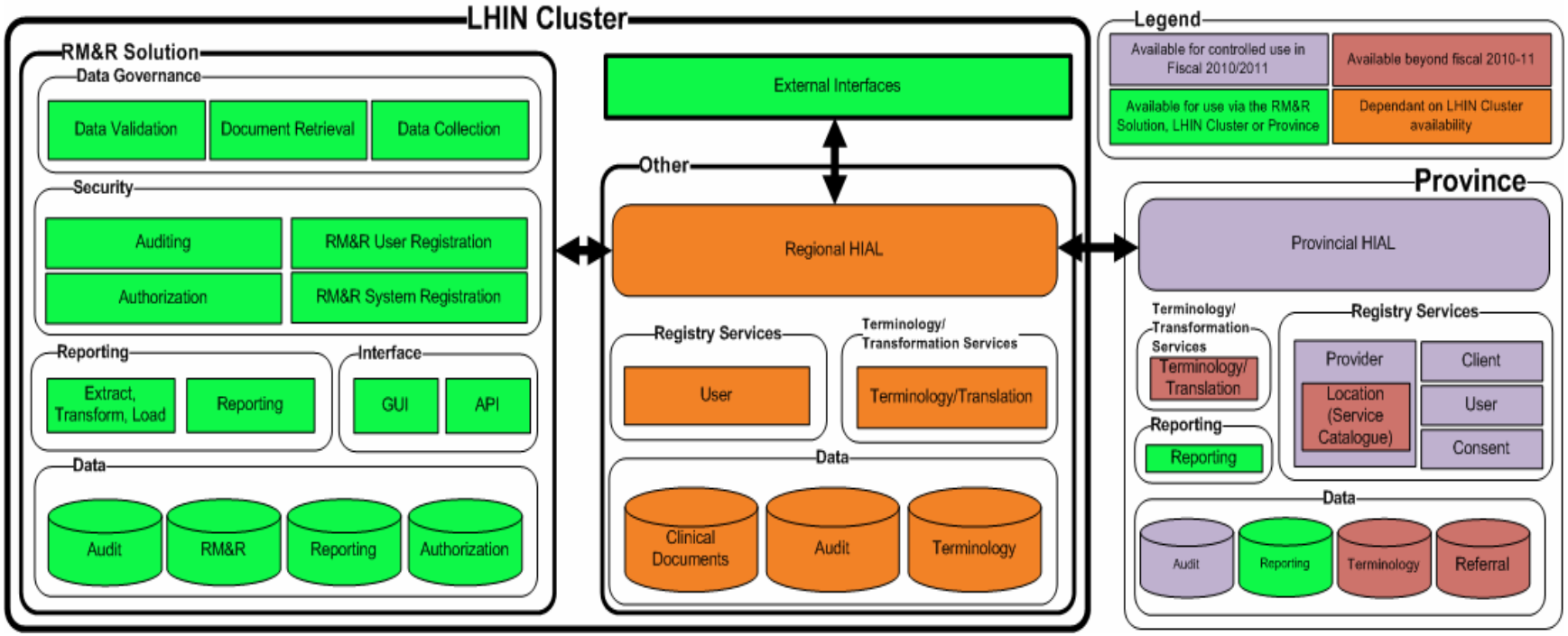
Recommended Approach

1. HIS, CIS and Case Management systems exchange information with the RM&R solution in near real-time as required to support the RM&R business processes.
2. The care team creates and manages referrals.
3. Users logging into the RM&R solution are authenticated against a LHIN-user Registry.
4. The RM&R solution verifies that the user has access to any or all of the referral information by validating against the patient/client consent directives.
5. Client information in the referral is validated against the provincial Client Registry.
6. Provider, location and service information in the referral information is validated against the provincial Provider Registry.
7. Users at post-acute providers are notified and have direct access to the RM&R solution to respond to referrals.
8. The RM&R solution may interface to CIS/ HIS to provide information, as required, to execute the final patient transfer.
9. The RM&R solution enables the trending and reporting of RM&R data and metrics for future provincial reporting.
10. Communication to other RM&R solutions for inter-LHIN cluster referrals.



Future State – High-Level Architecture

Alignment to the Ontario eHealth Blueprint helps to realize cost and operational benefits of using provincial services.



Notes:

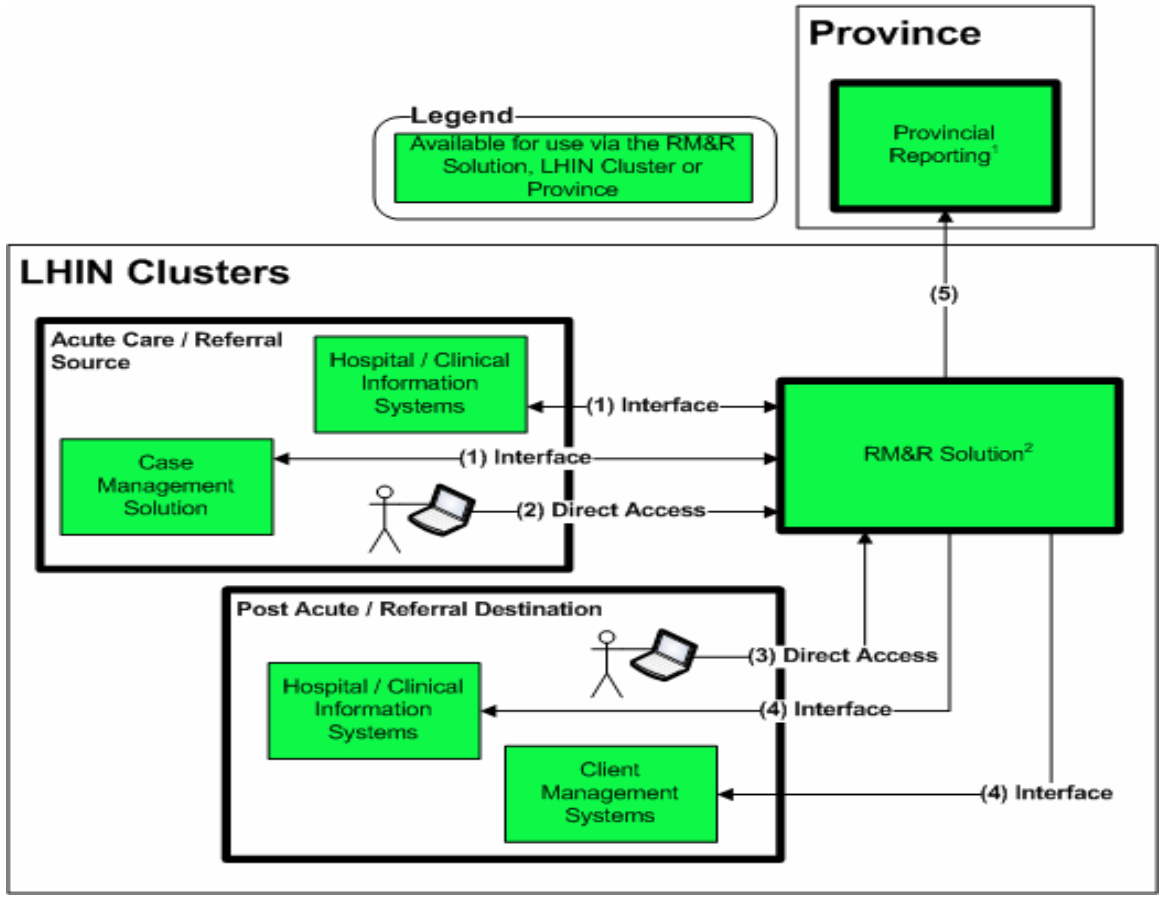
- This diagram is drawn in the context and scope of the RM&R solution.
- This is a future state vision of the RM&R solution and is aligned with the Ontario eHealth Blueprint.
- This diagram does not depict an exhaustive list of services. Functional and non-functional requirements will provide the minimum requirements for the RM&R solution.
- LHIN cluster and/or provincial services not available at time of implementation, will require secondary options to be determined by the LHIN cluster.

Initial State – Business Network Diagram

The RM&R solution interacts with users and external systems (acute care and post-acute care) to support RM&R processes.

Interaction Descriptions

1. HIS, CIS and Case Management systems exchange information with the RM&R solution in near real-time as required to support the RM&R business processes.
2. The care team creates and manages referrals.
3. Post-acute providers are notified and have direct access to the RM&R solution to respond to referrals.
4. The RM&R solution may interface to CISs or HISs to provide additional information as part of the final patient transfer.
5. The RM&R solution enables the trending and reporting of RM&R data and metrics for future provincial reporting.



Notes:

1.The provincial reporting solution is to be determined.

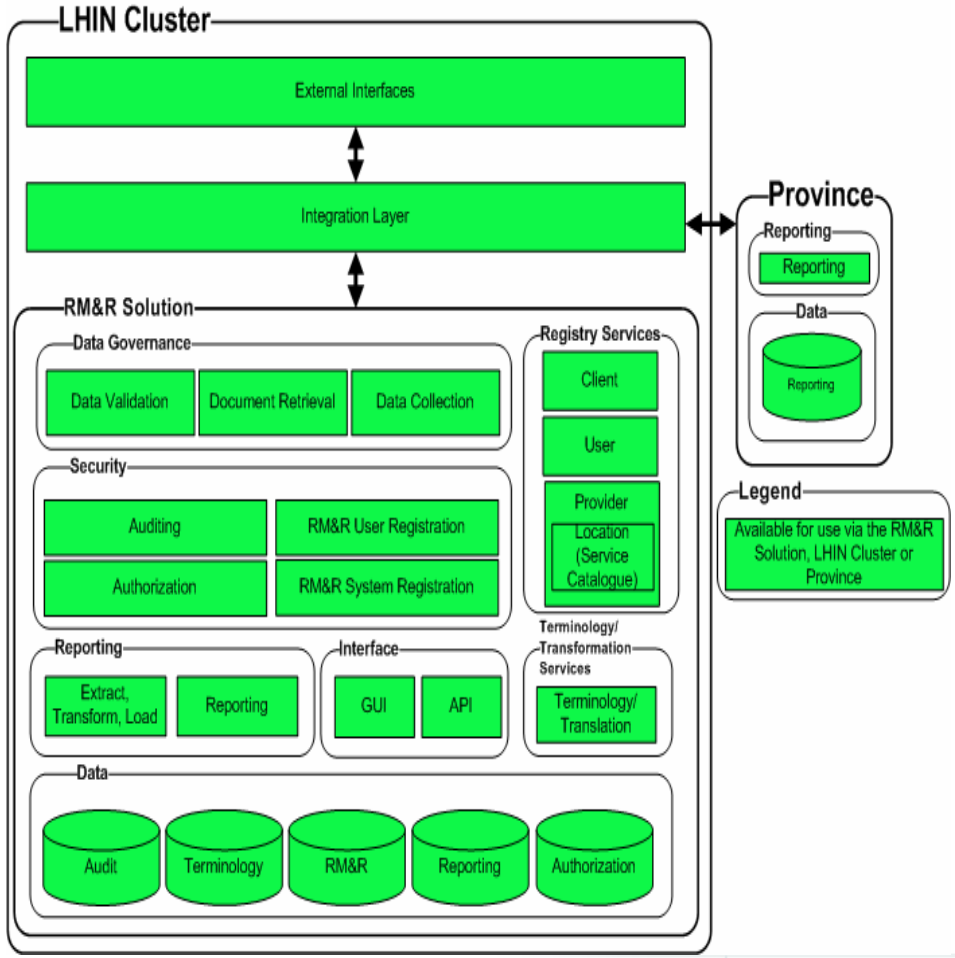
2.Client, provider, location & user information is validated within the RM&R solution.

Initial State – High-Level Architecture

The initial implementation of RM&R solutions will include the following services:

Recommended Approach

- In the absence of a Regional HIAL, an integration engine should be utilized to connect the RM&R solution to HIS, Case Management Solutions and provincial services to avoid point-to-point integrations. Consult with the Integration Services program at eHealth Ontario to minimize re-work required for migration to the Regional HIAL implementation.
- In the absence of availability of a provincial Client Registry the RM&R solution should provide functionality for client demographic data validation (such as address or postal code validation) to ensure minimal data quality.
- In the absence of availability to a provincial Provider Registry, the RM&R solution should provide functionality for provider demographic data validation .
- In the absence of availability to a provincial Location Registry the RM&R solution should maintain a health care service catalogue and provider relationships.
- In the absence of availability to a provincial Consent Registry, consent should be handled via a manual process as is done today.
- In the absence of a LHIN cluster User Registry, the RM&R solution should provide functionality for registration, authentication, authorization and identity management.
- In the absence of a regional HIAL LHIN Cluster should provide functionality for translation to HL7 v3.0 messages in the Integration Layer.
- In the absence of a Terminology Service at the LHIN cluster and the province, the RM&R solution should provide functionality for Terminology translation e.g. HIS to RM&R.



Technology Standards Considerations

The RM&R solution should adopt the following standards to ensure interoperability and security requirements:

Service Name	Standards
Graphical User Interface (GUI)	• HTML (Hypertext Markup Language) v4.01 v3.2 • HTTP (Hypertext Transfer Protocol) ext v1.1 RFC2817 • ISO (International Organization for Standardization) 9241-8:1998 Displayed Colours • W3C (World Wide Web Consortium)
Terminology	• SNOMED-CT (Systematized Nomenclature of Medicine--Clinical Terms) • LOINC (Logical Observation Identifiers Names and Codes) • ICD-10-CA (International Classification of Diseases - Canadian Enhancement)
Message Validation	• Ontario eReferral Specification • HL7 (Health Level 7) v3 • DICOM (Digital Imagining and Communications in Medicine) • SOAP v1.2
Authentication & Authorization	• SAML (Security Assertions Markup Language) v2.0 • LDAPv3 (Lightweight Directory Access Protocol)
Encryption	• Reference eHealth Ontario security and encryption standards
Gateway	• WS-* (Web Service) • SOAP v1.2
Web Services	• UDDI (Universal Description Discovery and Integration) v3.0 • WSDL (Web Service Definition Language) v1.1 • WS-I (Web Service Lookup) • WS-Security (Web Service Security) • WSRP (Web Services for Remote Portlets)

Ontario eReferral Specification

The provincial eReferral Specification is a provincial standard message for communications between systems to manage a referral.

- Broader than Canada Health Infoway (CHI) specification as it covers interactions not just addition to a referral repository
- Broader than the PRM scope as it goes beyond the four pathways
- Currently under development at eHealth Ontario – eHealth Standards Program
- Available for public review as of March 22, 2010
- Public Review period is three weeks
- Specification will be available at http://ehealthontario.on.ca/programs/eHealthStandards.asp

Questions and Answers

To access the PRM documents, please visit:
www.ehealthontario.on.ca

For any follow-up questions or queries please contact:

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Appendix

Information Presented by:

- **Rimmy Kaur** is the Senior Program Manager at Cancer Care Ontario where she is responsible for the provincial ALC Resource Matching & Referral (RM&R) project. In this role, Rimmy led the development and release of the Provincial Reference Model which was issued to Ontario's 14 Local Health Integrated Networks (LHINs) in December 2009. Prior to joining Cancer Care Ontario, Rimmy was with Shared Information Management Services (SIMS) at University Health Network where she was responsible for the IM/IT project portfolio for Toronto Central Community Care Access Centre.

- **Stephen McAteer** is the Clinical Liaison with the Access to Care Information Program at Cancer Care Ontario. Stephen served as a member of the ALC Definition Working Group charged with drafting the new provincial ALC definition. He is currently involved in the planning for the upcoming beta deployment for the Wait Time Information System-ALC application in preparation for a full provincial release by summer 2011.

- **Dwayne Pickering** has been with eHealth Ontario, previously Smart Systems for Health Agency (SSHA), for over five years and is the Information Architect with the Enterprise Architecture team. Dwayne has spent the last 18 years in IT and the past seven years as an Architect. Dwayne has been actively involved in the development of the Provincial Reference Model, with a specific focus on the technology solution framework, to ensure alignment with eHealth Ontario architecture.