

EMR Certification

eHealth_hub - Client Registry Query Service Interface Specification

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Version 1.2

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1 Introduction

The purpose of this document is to provide an overview of the eHealth_hub - Client Registry Query Service Interface service (hereafter referred to as the “CR Query Service”). The document will describe the high-level architecture of the data retrieval model, as well as the technical details and requirements regarding the web service and web service security.

1.1 Glossary

The following defines key business terms and acronyms used throughout this document.

Table 1: Terms and Acronyms

TERM OR ACRONYM	DEFINITION
Client	A client is an individual seeking and receiving health-care services. May be interchanged with term “patient”.
eHealth_hub	A Shared Health business service that coordinates electronic delivery of information between systems to authorized health-care providers who are using a Manitoba Certified EMR.
eHealth_hub - Client Registry Query Service (CR Query Service)	Customers of this service have the capability to search and retrieve identification and demographic information from the Manitoba Provincial Client Registry into their local systems.
Health Information Access Layer (HIAL)	Shared Health’s core integration service which provides the environment and capabilities necessary to establish interoperability between systems. For example, HIAL is a Shared Health Service that enables Business Services such as eHealth_hub.
Manitoba Certified EMR Products (EMR)	An Electronic Medical Record product that has achieved Certification in Manitoba , and is referred to throughout this document as “EMR”.
Manitoba Provincial Client Registry (Provincial CR)	The Manitoba Provincial Client Registry provides a single, province-wide view of demographic and identifying information for clients receiving health- care in Manitoba.
MHRN	Refers to the Manitoba Health Registration Number, which is a 6-digit family or single person’s registration number.
PHIN	A Personal Health Information Number is the unique identifier assigned to individuals eligible for ensured benefits within

	Manitoba.
Simple Object Access Protocol (SOAP)	SOAP is a messaging protocol that allows programs that run on disparate operating systems (such as Windows and Linux) to communicate using Hypertext Transfer Protocol (HTTP) and its Extensible Markup Language (XML).
Web Services Description Language (WSDL)	The Web Services Description Language is an XML-based interface definition language that is used for describing the functionality offered by a web service.
XML Schema Definition (XSD)	XSD specifies how to formally describe the elements in an Extensible Markup Language (XML) document.

1.2 Business Objectives & Benefits Summary

The objective of the CR Query Service interface is to provide Manitoba Certified EMR Products (EMR) users with a secure method to query and import client demographics from the Manitoba Provincial Client Registry (Provincial CR). This service enables the following key benefits:

- Reduces average time to register a new client
- Improves client identification due to robust search capabilities, increasing patient safety
- Improves data quality with less manual entry of new or updated information
- Improves cost recovery: alerts EMR Users of current insurance status so they can request alternate payment methods where required
- Reduces billing rejections with PHIN validation
- Improved ability to contact clients for appointments with most current info available
- Visual notification of events e.g. client insurance has expired or client is deceased
- Assists with the management of duplicate records

1.3 Related Documents

This document references the following companion documents:

Table 2: Related Documents

DOCUMENT
Manitoba EMR Certification - Baseline EMR Requirements Specification
eHealth_hub - Client Registry Query Service Interface Assessment Guide
eHealth_hub – Authentication Specification
eHealth_hub - Client Registry Query Service Interface Assessment Addendum

Upon application for EMR Certification to this specification, Vendors can email EMR@sharedhealthmb.ca or contact their EMR Product Lead to request the additional assessment addendum containing additional configuration and connectivity details necessary for assessment.

2 CR Query Service Overview

The Provincial CR creates and maintains an accurate record of clients' demographic and identification information. This registry is fundamental to achieving the Province of Manitoba's vision of safe, effective and efficient coordination of clients' health information across the province.

Best practices and information technologies, allows an authorized health-care provider to identify registered individuals for the purpose of associating their correct health records to other services/systems.

The CR Query Service will provide a system interface that enables the Certified EMR Products to search the Provincial CR to obtain up-to-date and trusted client demographics and select and import the desired information into the EMR as appropriate. The demographics retrieved by this service represent the most current and trusted demographics available from Provincial CR sources throughout Manitoba.

3 High-level Architecture

The architecture of the CR Query Service allows registered clinics to query the Provincial CR, through the provincial Health Information Access Layer (HIAL), for the retrieval of client demographics. The integration service exposes a generic, secure, synchronous mechanism to query the Provincial CR using standardized message formats.

The querying of the Provincial CR from within an EMR certified to this specification is intended to be optional for the end user.

The demographics returned by the query may be used to update or create a local client record, at the user's discretion, for user-selected attributes.

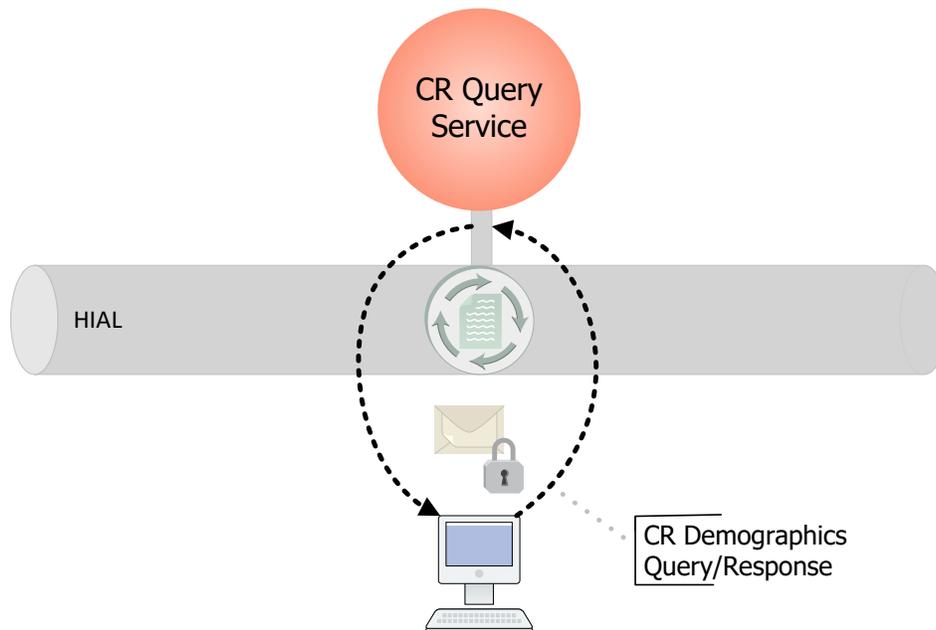


FIGURE 1: CR QUERY SERVICE OVERVIEW

The sequence diagram in Figure 2 describes the synchronous request and response mechanism used to interface with the CR Query Service.

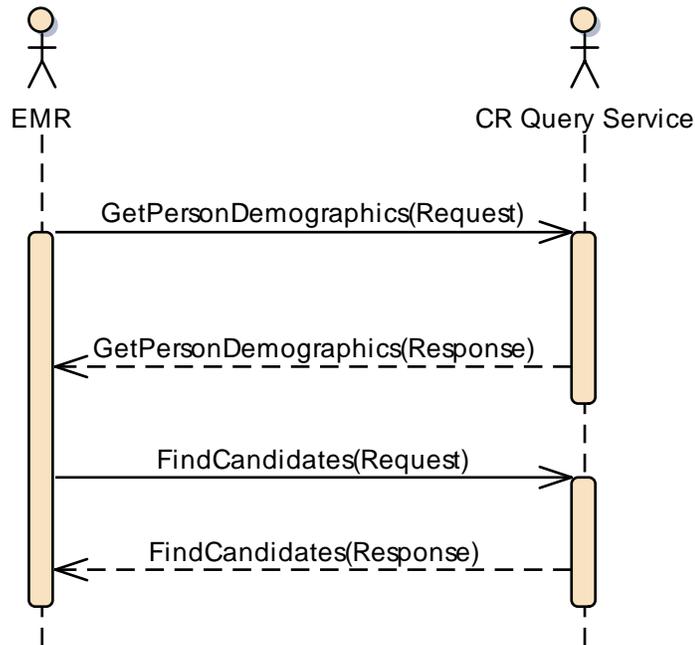


FIGURE 2: CR QUERY SERVICE SEQUENCE DIAGRAM

The EMR will send a query request to the Provincial CR by interfacing with the CR Query Service and utilize the GetPersonDemographics and FindCandidates operations.

To ensure the security and privacy of CR Query Service result data, the interface will require the use of a mutual certificate authentication.

Each instance of the EMR will require a unique certificate, issued by Shared Health, which will identify the authenticity of the EMR when attempting to exchange data with the CR Query Service. Note that certificates are typically issued for each EMR instance.

4 CR Query Service Use Cases

The use cases in this section describe functionality required of the EMR product. They are supported by the requirements detailed in this specification.



FIGURE 3: HIGH-LEVEL USE CASES

4.1 Configure CR Query Service (UC-001)

This use case describes the process to configure the CR Query Service functionality in the EMR.

PRIMARY ACTORS
<ul style="list-style-type: none"> • EMR • EMR administrator/appropriate user
TRIGGER(S)
<ul style="list-style-type: none"> • EMR administrator/appropriate user is ready to configure the CR Query Service for use in the EMR
PRE-CONDITIONS / INPUTS
<ul style="list-style-type: none"> • CR Query Service functionality has met the certification, business and technical requirements to deliver the CR Query Service • User training is available • Security certificates are installed and communication successfully tested in the EMR • CR Query Service is provisioned at the EMR instance level
POST-CONDITIONS / OUTPUTS
<ul style="list-style-type: none"> • EMR User is able to access (or not access) the CR Query Service
MAIN SUCCESS SCENARIO (BASIC FLOW)
<ol style="list-style-type: none"> 1. EMR administrator/appropriate user enables the CR Query Service functionality in the EMR.
ALTERNATE FLOWS
<p>A1 – Disables the CR Query Service</p> <ol style="list-style-type: none"> 1. EMR administrator/appropriate user disables the CR Query Service functionality in the EMR.

4.2 Create CR Query (UC-002)

This use case describes the process to create an initial CR Query from the EMR.

PRIMARY ACTORS
<ul style="list-style-type: none"> • EMR • EMR User
TRIGGER(S)
<ul style="list-style-type: none"> • EMR User has a need to query demographics from the Provincial CR
POST-CONDITIONS / OUTPUTS
<ul style="list-style-type: none"> • CR Query is created
MAIN SUCCESS SCENARIO (BASIC FLOW)
<ol style="list-style-type: none"> 1. EMR User either: <ol style="list-style-type: none"> a) Enters demographic information (including PHIN) for a create new client action b) Places a client in context (client demographics include PHIN) 2. EMR User triggers CR Query Service action. 3. EMR creates Get query. 4. Follow Submit CR Query (UC-003).
ALTERNATE FLOWS
<p>A1 – Client does not contain PHIN</p> <ol style="list-style-type: none"> 1. EMR User either: <ol style="list-style-type: none"> a) Enters demographic information (not including PHIN) for a create new client action b) Places a client in context (client demographics do not include PHIN) 2. EMR User triggers CR Query Service action. 3. EMR builds a Find query using available client demographics and validates against allowable search combinations. 4. Follow Submit CR Query (UC-003).
EXCEPTION FLOWS
<p>E1 - None of the allowable Provincial CR search combinations are used</p> <p><i>Start Exception Flow at:</i></p> <ul style="list-style-type: none"> • <i>Alternate Flow – A1 – After Step 3</i>

1. EMR System displays invalid search warning.
2. EMR System provides options to either:
 - a) Cancel (**End Flow**)
 - b) Refine CR Query
3. Follow [Refine CR Query \(UC-004\)](#).

4.3 Submit CR Query (UC-003)

This use case describes the process to submit a CR Query generated by the EMR.

PRIMARY ACTORS
<ul style="list-style-type: none"> • EMR • EMR User • CR Query Service
TRIGGER(S)
<ul style="list-style-type: none"> • A valid CR Query has been created
POST-CONDITIONS / OUTPUTS
<ul style="list-style-type: none"> • CR Query is submitted to the CR Query Service
MAIN SUCCESS SCENARIO (BASIC FLOW)
<ol style="list-style-type: none"> 1. EMR sends a CR Query. 2. CR Query Service receives CR Query.
EXCEPTION FLOWS
<p>E1 – CR Query Service is unavailable <i>Start Exception Flow at:</i></p> <ul style="list-style-type: none"> • <i>Basic Flow – After Step 1</i> <ol style="list-style-type: none"> 1. EMR System displays CR Query Service unavailable notification to EMR User. <p>E2 – Error was encountered <i>Start Exception Flow at:</i></p> <ul style="list-style-type: none"> • <i>Basic Flow – After Step 2</i> <ol style="list-style-type: none"> 1. CR Query Service sends error code and message. 2. EMR displays error with remediation steps to EMR User.

4.4 Refine CR Query (UC-004)

This use case describes the process to refine CR Query that was previously created.

PRIMARY ACTORS
<ul style="list-style-type: none"> • EMR • EMR User
TRIGGER(S)
<ul style="list-style-type: none"> • EMR User has a need to refine a previously created CR Query
PRE-CONDITIONS / INPUTS
<ul style="list-style-type: none"> • Previous CR Query has been created
POST-CONDITIONS / OUTPUTS
<ul style="list-style-type: none"> • CR Query is refined
MAIN SUCCESS SCENARIO (BASIC FLOW)
<ol style="list-style-type: none"> 1. EMR User refines a CR Query from the previously created CR Query. <ol style="list-style-type: none"> a) Refine CR Query criteria is pre-populated with: <ol style="list-style-type: none"> i. Additional available client demographics when a previous Get query was submitted ii. Previous CR Query criteria when a previous Find query was submitted 2. EMR builds a Find query using the refined CR Query and validates against allowable search combinations. 3. Follow Submit CR Query (UC-003).
EXCEPTION FLOWS
<p>E1 - None of the allowable Provincial CR search combinations are used <i>Start Exception Flow at:</i></p> <ul style="list-style-type: none"> • <i>Basic Flow– After Step 2</i> <ol style="list-style-type: none"> 1. EMR System displays invalid search warning. 2. EMR User acknowledges warning. 3. EMR System provides options to either: <ol style="list-style-type: none"> a) Cancel (End Flow) b) Refine CR Query 4. Follow Refine CR Query (UC-004).

4.5 Display CR Response – Get Response (UC-005)

This use case describes the process to view a Get query result returned from the CR Query Service.

PRIMARY ACTORS
<ul style="list-style-type: none"> • EMR • EMR User • CR Query Service
TRIGGER(S)
<ul style="list-style-type: none"> • Get query has been submitted to the CR Query Service
POST-CONDITIONS / OUTPUTS
<ul style="list-style-type: none"> • CR record is displayed and the corresponding demographic information may be chosen to be accepted in the local EMR
MAIN SUCCESS SCENARIO (BASIC FLOW)
<ol style="list-style-type: none"> 1. CR Query Services sends Get result. 2. EMR accepts result. 3. EMR displays the difference between the entered demographic elements/local EMR record and the CR record to the EMR User in a comparison view format. 4. EMR User accepts either all or partial demographic data from the selected CR record. 5. EMR creates new/updates local EMR client record.
EXCEPTION FLOWS
<p>E1 – No Provincial CR results are returned Start exception flow at:</p> <ul style="list-style-type: none"> • <i>Basic Flow – After Step 2</i> <ol style="list-style-type: none"> 1. EMR builds and validates a Find query using additional available client demographic elements. 2. Follow Submit CR Query (UC-003).
<p>E2 – EMR User wishes to refine CR Query Start exception flow at:</p> <ul style="list-style-type: none"> • <i>Basic Flow – After Step 3</i> <ol style="list-style-type: none"> 1. Follow Refine CR Query (UC-004).

E3 - None of the allowable Provincial CR search combinations are used

Start Exception flow at:

- *Exception Flow – E1 – After Step 1*
 1. EMR System displays invalid search warning.
 2. EMR User acknowledges warning.
 3. EMR System provides options to either:
 - a) Cancel (**End Flow**)
 - b) Refine CR Query
 4. Follow [Refine CR Query \(UC-004\)](#).

E4 –Returned client is associated with deceased or invalid coverage indicator

Start Exception Flow at:

- *Basic Flow – After Step 2*
 1. EMR displays warning that selected client is associated with the applicable indicator.
 2. Rejoin Basic Flow at Step 3.

4.6 Display CR Response – Find Response (UC-006)

This use case describes the process to view a Find query result set returned from the CR Query Service.

PRIMARY ACTORS
<ul style="list-style-type: none"> • EMR • EMR User • CR Query Service
TRIGGER(S)
<ul style="list-style-type: none"> • Find query has been submitted to the CR Query Service
POST-CONDITIONS / OUTPUTS
<ul style="list-style-type: none"> • Find result set is displayed to the EMR User
MAIN SUCCESS SCENARIO (BASIC FLOW)
<ol style="list-style-type: none"> 1. CR Query Services sends Find query result set. 2. EMR accepts result set and EMR displays list of results.
EXCEPTION FLOWS

E1 – No Provincial CR results are returned

Start Exception Flow at:

- *Basic Flow – After Step 2*
1. EMR displays message that no results were returned and advise to refine CR Query.
 2. EMR provides options to either:
 - a) Cancel (**End Flow**)
 - b) Refine CR Query
 3. Follow [Refine CR Query \(UC-004\)](#).

E2 – CR Query Service max results limit is reached

Start Exception Flow at:

- *Basic Flow – A1 – After Step 2*
1. EMR displays message that too many results exist and advise to refine CR Query.
 2. EMR provides options to either:
 - a) Cancel (**End Flow**)
 - b) Refine CR Query
 3. Follow [Refine CR Query \(UC-004\)](#).

E3 – EMR User wishes to refine CR Query

Start Exception Flow at:

- *Basic Flow – After Step 2*
1. Follow [Refine CR Query \(UC-004\)](#).

4.7 Select Record (UC-007)

This use case describes the process to select a CR record.

PRIMARY ACTORS
<ul style="list-style-type: none"> • EMR • EMR User
TRIGGER(S)
<ul style="list-style-type: none"> • EMR User has a need to select a CR record from a Find query result set
PRE-CONDITIONS / INPUTS

<ul style="list-style-type: none"> Find result set is displayed in the EMR
POST-CONDITIONS / OUTPUTS
<ul style="list-style-type: none"> CR record is displayed and the corresponding demographic information may be chosen to be accepted in the local EMR
MAIN SUCCESS SCENARIO (BASIC FLOW)
<ol style="list-style-type: none"> EMR User selects a CR record. EMR displays additional attributes of the selected CR record and the difference between the entered demographic elements/ local EMR record and the selected CR record. EMR User creates/updates a local EMR client record by selecting all or partial demographic data from the selected CR record.
EXCEPTION FLOWS
<p>E1 – Selected client is associated with deceased or invalid coverage indicator Start Exception Flow from either:</p> <ul style="list-style-type: none"> Basic Flow – After Step 2 <ol style="list-style-type: none"> EMR displays warning that selected client is associated with the applicable indicator. Rejoin Basic Flow at Step 3.

4.8 Cancel CR Query (UC-008)

This use case describes the process to cancel a CR Query.

PRIMARY ACTORS
<ul style="list-style-type: none"> EMR EMR User
TRIGGER(S)
<ul style="list-style-type: none"> EMR User has a need to cancel an existing CR search
PRE-CONDITIONS / INPUTS
<ul style="list-style-type: none"> CR Query is in progress
POST-CONDITIONS / OUTPUTS
<ul style="list-style-type: none"> EMR exits the CR Query process
MAIN SUCCESS SCENARIO (BASIC FLOW)
<ol style="list-style-type: none"> EMR User cancels the CR Query process.

5 Requirements

This section includes mandatory requirements and guidelines for configuring an EMR to integrate with the CR Query Service.

5.1 Requirement Column Definition

For ease of review and understanding, requirements are documented in a manner consistent with previous EMR Certification documentation. For each requirement, the following information is provided:

- **ID** – a unique identifier assigned to the requirement by Manitoba
- **Requirement** – a concise statement describing the requirement
- **Guidelines** – these additional instructions constitute part of the requirement and are relevant to implementation of the requirement in the EMR product. As such, these guidelines form part of the assessment criteria and are included in the planned product assessment.
- **Additional Notes** – relevant information or examples intended to give additional context to the requirement and to improve understanding
- **Status** – each requirement is clearly identified as:
 - New (not included in previous specifications);
 - Updated (modification to intent of the requirement from a previous version); or
 - Previous (unchanged from last issuance of core requirements).
- **Assessment** – the method of assessment is stated in the “Assessment” column for each requirement. All requirements will be assessed using the following method:
 - Assertion – Vendors will make an assertion (Yes or No) based on their self-assessment of the product’s ability to meet the requirement. Manitoba may choose to audit Vendor assertions as part of the certification process, as authorized within the Agreement.
 - Verification – leveraging the Certification Environment, Manitoba will verify the product’s ability to meet requirements. Clinical and administrative resources may be involved in the verification process.
 - Demonstration – Vendors will demonstrate key functions within their EMR product. Demonstrations may be conducted in person, by remote means (e.g. teleconference and Internet) or through recorded video.
 - System Integration Testing – this most comprehensive assessment method requires an end-to-end test of key functions such as interoperability between the EMR product and other systems (e.g. eChart Manitoba Launch or eHealth_hub)

5.2 CR Query Service Requirements

Table 3: CR Query Service Requirements

ID	REQUIREMENT	GUIDELINES	ADDITIONAL NOTES	STATUS	ASSESSMENT
CR001	Interfaces with the CR Query Service web service to facilitate EMR client search capabilities.	For a description of the web service and Message overview see Appendix A: Web Service . The web service uses Web Services Description Language (WSDL) version 1.1.	HL7 messages are tailored to Certified EMR Product needs, and do not necessarily reflect all WSDL fields.	Previous	System Integration Testing
CR002	Conforms CR Query Service requests to the CRQueryService.xsd.	The XSD can be found in the web service documents section of the eHealth_hub - Client Registry Query Service Assessment Addendum.		Previous	Assertion
CR003	Provides access to the CR Query Service for EMR Users via their existing user credentials.		There is no requirement to provision new service to a user level. All EMR Users will have access to the Client Registry EMR functions.	Previous	Assertion
CR004	Maintains and provides EMR details for each web service request.	At minimum the EMR must maintain the following details: <ul style="list-style-type: none"> • EMR ID (MSH3.1) • Clinic ID (MSH4.1) • EMR Name (ZEV2.1) • EMR Version (ZEV.2.2) • Operator ID (ZEV1.1) 	Operator ID – a unique identifier of the operator of the source system (i.e. application username)	Previous	System Integration Testing

ID	REQUIREMENT	GUIDELINES	ADDITIONAL NOTES	STATUS	ASSESSMENT
		<ul style="list-style-type: none"> Transaction ID (MSH10 and QPD2) <p>The EMR ID and Clinic ID must be configurable parameters.</p> <p>EMR must supply the same unique transaction ID during each web method request.</p>			
CR005	Provides an error logging and handling mechanism for the error scenarios encountered in the message retrieval process.	<p>Error messages must be notified / reported to the EMR administrator/appropriate user, as well as be maintained in the EMR interface log.</p> <p>The logging/notification/reporting must be able to identify the date and time of attempt, error ID, error type and error message.</p> <p>In addition to the technical error details, the error message should also include error remediation instructions for the EMR User (e.g. contact your EMR administrator/appropriate user).</p>	Error scenarios, error codes and SOAP message examples are listed in: 6.2.5 SOAP Fault Response	Previous	System Integration Testing
CR006	Provides the capability for an EMR administrator/appropriate user to enable or disable the interface.	The interface must be disabled by default for each implementation.	CR Query Service is provisioned at the EMR instance level.	Previous	System Integration Testing

ID	REQUIREMENT	GUIDELINES	ADDITIONAL NOTES	STATUS	ASSESSMENT
CR007	Provides the ability to create a CR Query from EMR demographic elements.	<p>CR queries provide the ability for EMRs to search on the following demographic elements:</p> <ul style="list-style-type: none"> • Name (first, last, and middle) • PHIN and/or Health-care Identifiers (See 7.2 Permissible Identifiers for FindCandidates Operation (990001)) • Birth Date (YYYYMMDD) • Street Address • Gender • Phone Number 		Previous	System Integration Testing
CR008	Provides a CR Query function to the EMR User.	<p>The EMR User must be provided the option to create and invoke a CR Query.</p> <p>At minimum, the EMR must provide the ability to create and invoke a CR Query in the following EMR workflows:</p> <ul style="list-style-type: none"> • Adding a new client • Placing a pre-existing client in context 		Previous	System Integration Testing
CR009	Provides the ability to create and invoke a CR Query without EMR User re-entry of client demographic elements.	The EMR must be able to invoke the GetPersonDemographics and FindCandidates operations.	<p>SOAP request and response samples are provided in:</p> <ul style="list-style-type: none"> • 6.2.2 Get Person Demographics Operation • 6.2.3 FindCandidates 	Previous	System Integration Testing

ID	REQUIREMENT	GUIDELINES	ADDITIONAL NOTES	STATUS	ASSESSMENT
		<p>Required request and response parameters are listed in:</p> <ul style="list-style-type: none"> • 6.2.2 GetPersonDemographics Operation • 6.2.3 FindCandidates Operation 	<p>Operation</p>		
CR010	<p>Invokes a GetPersonDemographics operation on an initial CR Query if a Manitoba PHIN is available.</p>	<p>The EMR must only use the Manitoba PHIN in GetPersonDemographics operations.</p> <p>If no result is returned the EMR must automatically call the FindCandidates operation should demographic elements other than PHIN be available in the search, without EMR User intervention.</p>	<p>A Manitoba PHIN is identified by specifying the following:</p> <ul style="list-style-type: none"> • CANMB-JHI(QPD3.4.1) • JHNMB(QPD3.5) • MBH(QPD3.6) 	Previous	System Integration Testing
CR011	<p>Provides the ability for the EMR User to refine a CR Query from a previous CR Query.</p>	<p>All refine CR Query events must invoke the FindCandidates operation.</p> <p>If the previous CR Query was:</p> <ul style="list-style-type: none"> • GetPersonDemographics: Any of the client's available demographic elements must be pre-populated in the refine CR Query • FindCandidates: All of the 		Previous	System Integration Testing

ID	REQUIREMENT	GUIDELINES	ADDITIONAL NOTES	STATUS	ASSESSMENT
		<p>demographic elements from the previous CR Query must be pre-populated in the refine CR Query</p> <p>Re-entry of pre-populated demographic elements by an EMR User is not an acceptable solution.</p> <p>Option to clear demographic elements or begin a new search should also be made available to the EMR User.</p>			
CR012	Invokes a FindCandidates operation.	<p>The FindCandidates operation is invoked for initial queries with no Manitoba PHIN available or for refine CR Query events.</p> <p>Below are the allowable minimum search combinations:</p> <ul style="list-style-type: none"> • PHIN • MHRN AND Name (at least two name tokens of any type, e.g. Legal, Maiden) • Other Provincial Health-care Identifiers AND Name (at least two name tokens of any type, e.g. Legal, Maiden) • Two name tokens of any type, e.g. Legal, Maiden) AND Date of Birth 	The FindCandidates operations should not use wildcard, partial name/date searches or anonymous values for example “Infant”, “N/A”, etc.	Previous	System Integration Testing

ID	REQUIREMENT	GUIDELINES	ADDITIONAL NOTES	STATUS	ASSESSMENT
		<p>The following demographic elements may be added to any of the allowable search combinations to improve CR Query results:</p> <ul style="list-style-type: none"> • Gender • Postal Code • Street Address • Phone Number <p>If improper search criteria are used (i.e. none of the allowable search criteria) the EMR must display a message indicating an improper search criteria were used and reference the allowable search criteria.</p>			
CR013	Provides the ability to continue existing EMR workflows in the event the CR Query Service is not available.			Previous	System Integration Testing
CR014	Provides a notification that a query response contains an unacceptable amount of records.	If the CR Query Service maximum results limit is reached no results will be delivered and an error code will be sent. The EMR must provide a notification to the EMR User that CR Query Service maximum result limit has been reached and suggest a	Error scenarios, error codes and SOAP message examples are listed in: 6.2.5 SOAP Fault Response	Previous	System Integration Testing

ID	REQUIREMENT	GUIDELINES	ADDITIONAL NOTES	STATUS	ASSESSMENT
		refine query action.			
CR015	Provides the ability to present differences between the local EMR record compared with a CR record.	<p>If a record is selected from the FindCandidates results or returned by the GetPersonDemographics the EMR must present the differences in all of the demographic elements. The displayed differences must exclude demographic elements containing blank or null values.</p> <p>In addition, all returned result attributes from the CR Query Service must be presented to the EMR User.</p>		Previous	System Integration Testing
CR016	Provides the EMR User with the option to accept all or specific demographic elements from a CR record into a local EMR record.	<p>The EMR must allow the EMR User to accept CR data elements into their EMR local record, for either the entire CR record or individual demographic element levels.</p> <p>Manual re-entry of demographic elements by an EMR User is not an acceptable solution.</p>		Previous	System Integration Testing
CR017	Displays the returned FindCandidates results.	<p>The following minimum result attributes must be displayed:</p> <ul style="list-style-type: none"> • Search Confidence Score • Full Legal Name • Full Health Card Name 		Previous	System Integration Testing

ID	REQUIREMENT	GUIDELINES	ADDITIONAL NOTES	STATUS	ASSESSMENT
		<ul style="list-style-type: none"> • Date of Birth • Gender • PHIN • Cancel Code • Death Date • Death Indicator <p>The EMR must display the CR Query results in descending order of search confidence score (which is the default order returned by the CR Query Service).</p> <p>If no result is returned the EMR must display an EMR User message indicating no results are found and advise the EMR User to refine CR Query.</p> <p>Upon selection of a search record from the result list, the following minimum additional attributes must be displayed if available:</p> <ul style="list-style-type: none"> • Cancel Code Description • Primary Home Address • Alternate Name(s) • Alternate ID(s) • PHIN Effective Date • PHIN Expiry Date • Phone Numbers <ul style="list-style-type: none"> ○ Home, Cell, and Work 			

ID	REQUIREMENT	GUIDELINES	ADDITIONAL NOTES	STATUS	ASSESSMENT
CR018	Displays a notification to the EMR User for clients with a status of invalid coverage or identified as deceased when client with either status is selected from a FindCandidates result set or returned in a GetPersonDemographics result.	If available, the EMR will display the text in the: <ul style="list-style-type: none"> • Death Notification (ZPI2) • Coverage Notification (ZPI3) 	It is not necessary to force the EMR User to acknowledge notification with an EMR User action.	Previous	System Integration Testing
CR019	Provides the ability to cancel a CR Query search that is in progress.			Previous	System Integration Testing
CR020	Provides the ability to accept all returned values from the Provincial CR.	For example, gender codes returned from the Provincial CR must either be accepted by the EMR as a new EMR code, or be mapped to an existing EMR code.		Previous	System Integration Testing
CR021	Provides training documentation.	EMR must contain access to training documentation that explains to the EMR User how to interact with the CR Query Service through the EMR.		Previous	Assertion

5.3 Baseline and Legacy Requirements

Certified EMR Products must continue to satisfy all requirements listed in the [Baseline EMR Requirements Specification](#). In the context of this specification, the following selected Baseline requirements will be re-assessed using the assessment methods noted below.

Table 4: Baseline Requirements

BASELINE CATEGORY	RELEVANT REQUIREMENT	ASSESSMENT METHOD
Patient Demographics	01-002	Verification

5.4 Authentication Requirements

In addition to the specified requirements in this document the EMR must satisfy all requirements in the [eHealth hub – Authentication Specification](#).

6 Appendix A: Web Service

6.1 Web Service Definition Language (WSDL)

The CR Query Service has been exposed to the EMR community as a web service. The web service interaction is defined within an individual WSDL. The WSDL will be exposed on an HTTPS listener where authentication will occur based on prior certificate exchange. Once the EMR passes authentication, the EMR ID contained within the message body is checked to validate authorization to use the service. If the EMR fails authentication or authorization, a response containing fault code 5403 will be returned.

Note: Only the WSDL materials provided via the Certification process are supported. It is not recommended to automatically download the WSDL from the CR Query Service directly.

6.1.1 Web Service Documents

The web service documents may be found in the assessment addendum.

6.2 Request / Response Definitions

6.2.1 Message Details

The following table describes the operations exposed by the web service as well as the associated HL7 message structure. The ID represents the HL7 event type of the web service request / response for each operation. It will be used within this document when referencing the operation name. The HL7 structure for requests and responses are the same for both operations, the only difference is the data sent and returned.

The web service conforms to the PIX/PDQ HL7 standard described in the following web link http://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Vol2a.pdf

Note: HL7 messages are tailored to the needs of Certified EMR Products, and do not necessarily reflect all fields specified in the WSDL.

Table 5: Operation Request / Response Details

OPERATION	ID	REQUEST / RESPONSE	HL7 STRUCTURE
Get Person Demographics	QBP_Q21	Request	QBP_Q21
	RSP_K21	Response	RSP_K21
Find Candidates	QBP_Q22	Request	QBP_Q21
	RSP_K22	Response	RSP_K21

6.2.2 Get Person Demographics Operation

This operation retrieves a person's demographic information based on a unique identifier. The following sections describe the segments and fields within the request / response messages.

QBP_Q21 – REQUEST

Table 6: Get Person Demographics Request - Structure

SEGMENT	DESCRIPTION
MSH	Message Header
QPD	Query Parameter Definition
ZEV	Custom segment

MSH – Message Header Segment

Table 7: Get Person Demographics Request - MSH

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Field Separator	R	1	ST	1	" "
2	Encoding Characters	R	1	ST	4	"^~\amp;,"
3	Sending Application	R	1	HD	227	EMR ID - Unique identifier assigned to the EMR instance by Shared Health
3.1	Namespace ID	R	1	IS	20	"EMR-000"
4	Sending Facility	R	1	HD	227	Clinic ID- Unique identifier assigned to the clinic by Shared Health
4.1	Namespace ID	R	1	IS	20	"AAA"
5	Receiving Application	R	1	HD	227	Application that receives the message
5.1	Namespace ID	R	1	HD	20	"JCR"
6	Receiving Facility	R	1	HD	227	Facility that receives the message
6.1	Namespace ID	R	1	IS	20	"MEH"
7	Date/Time Of Message	R	1	TS	26	Date/time the message was created YYYYMMDDHHMMSS Application will assume timestamp of GMT-6 (Central Time)
9	Message Type	R	1	MSG	15	"QBP^Q21^QBP_Q21"
9.1	Message Type	R	1	ID	3	"QBP"
9.2	Trigger Event	R	1	ID	3	"Q21"
9.3	Message Structure	R	1	ID	7	"QBP_Q21"
10	Message Control ID	R	1	ST	20	Number or other value that uniquely identifies the message Receiving system echoes this ID back in the message acknowledgement

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
11	Processing ID	R	1	PT	3	Field is used to define whether to process the message "P" – Production, "D" – Testing, "T" – Training
12	Version ID	R	1	VID	5	"2.5.1"

QPD – Query Parameter Definition Segment

Table 8: Get Person Demographics Request - QPD

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Message Query Name	R	1	CE	250	Message Query Name
1.1	Identifier	R	1	ST	3	"K21"
1.2	Text	O	1	ST	128	"Get Person Demographics"
2	Query Tag	R	1	ST	32	Unique query identifier used to match a response message to the originating query This value is echoed back in the first field of QAK segment in the response This can be the same as the Message Control ID in MSH.10
3	Person Identifier	R	1	CX	250	Only valid identifiers for this query is a Manitoba PHIN
3.1	ID Number	R	1	ST	15	Field contains one identifier
3.4	Assigning Authority	R	1	HD	44	
3.4.1	Namespace ID	R	1	IS	20	Authority that created the identifier (CANMB-JHI)
3.5	Identifier Type Code	R	1	ID	5	Identifier Type Codes (JHNMB)
3.6	Assigning Facility	R	1	HD	227	Assigning Facility (MBH)
3.6.1	Namespace ID	R	1	IS	20	Facility Codes

ZEV – Custom Segment (Other Information)

Table 9: Get Person Demographics Request - ZEV

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Operator ID	R	1	XCN	350	User identifier of the user of the EMR instance, typically known as the username, if an operator ID is not present the query will return an error
1.1	ID Number	R	1	ST	250	An identifier of the operator of the source system (i.e. application username)
1.2	Family Name	O	1	FN	-	
1.2.1	Surname	O	1	ST	50	Surname of the Operator, if the surname is not available because it is a required field by convention provided the Operator ID a second time
1.3	Given Name	O	1	ST	50	Given name/s of the Operator if available
2	Client EMR Information	R	1	XCN	350	
2.1	EMR Name	R	1	ST	250	EMR Application Name
2.2	EMR Version	R	1	ST	250	EMR Application Version

SOAP Request Sample

```

<soapenv:Body>
  <urn:QBP_Q21>
    <urn:MSH>
      <urn:MSH.1>|</urn:MSH.1>
      <urn:MSH.2>^~\&&</urn:MSH.2>
      <urn:MSH.3>
        <urn:HD.1>EMRID</urn:HD.1>
      </urn:MSH.3>
      <urn:MSH.4>
        <urn:HD.1>ClinicID</urn:HD.1>
      </urn:MSH.4>
      <urn:MSH.5>
        <urn:HD.1>JCR</urn:HD.1>
      </urn:MSH.5>
      <urn:MSH.6>
        <urn:HD.1>MEH</urn:HD.1>
      </urn:MSH.6>
      <urn:MSH.7>
        <urn:TS.1>20180321010101</urn:TS.1>
      </urn:MSH.7>
      <urn:MSH.9>
        <urn:MSG.1>QBP</urn:MSG.1>
        <urn:MSG.2>Q21</urn:MSG.2>
        <urn:MSG.3>QBP_Q21</urn:MSG.3>
      </urn:MSH.9>
      <urn:MSH.10>0001</urn:MSH.10>
      <urn:MSH.11>
        <urn:PT.1>P</urn:PT.1>
      </urn:MSH.11>
      <urn:MSH.12>
        <urn:VID.1>2.5.1</urn:VID.1>
      </urn:MSH.12>
    </urn:MSH>
    <urn:QPD>
      <urn:QPD.1>
        <urn:CE.1>Q21</urn:CE.1>
        <urn:CE.2>Get Person Demographics</urn:CE.2>
      </urn:QPD.1>
      <urn:QPD.2>0001</urn:QPD.2>
      <urn:QPD.3>
        <urn:CX.1>922000119</urn:CX.1>
        <urn:CX.4>
          <urn:HD.1>CANMB-JHI</urn:HD.1>
        </urn:CX.4>
        <urn:CX.5>JHNMB</urn:CX.5>
        <urn:CX.6>
          <urn:HD.1>MBH</urn:HD.1>
        </urn:CX.6>
      </urn:QPD.3>
    </urn:QPD>
    <urn:ZEV>
      <urn:ZEV.1>
        <urn:XCN.1>TestID</urn:XCN.1>
        <urn:XCN.2>
          <urn:FN.1>LastName</urn:FN.1>
        </urn:XCN.2>
        <urn:XCN.3>FirstName</urn:XCN.3>
      </urn:ZEV.1>
    </urn:ZEV>
  </urn:QBP_Q21>
</soapenv:Body>

```



```
</urn:ZEV.1>  
<urn:ZEV.2>  
  <urn:HD.1>Test App</urn:HD.1>  
  <urn:HD.2>v1.0</urn:HD.2>  
</urn:ZEV.2>  
</urn:ZEV>  
</urn:QBP_Q21>  
</soapenv:Body>
```

RSP_K21 – RESPONSE

Table 10: Get Person Demographics Response - Structure

SEGMENT	DESCRIPTION
MSH	Message Header
MSA	Message Acknowledgement
QAK	Query Acknowledgement
QPD	Query Parameter Definition
{	Query Response Group Start
PID	Patient Identifier
[ZPI]	PID Extension
}	Query Response Group End

{ } - Denotes one or more repetitions of the enclosed segment(s).

[] - Denotes that the enclosed segment(s) is (are) optional

MSH – Message Header Segment

Table 11: Get Person Demographics Response - MSH

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Field Separator	R	1	ST	1	" "
2	Encoding Characters	R	1	ST	4	"^~\amp;:"
3	Sending Application	R	1	HD	227	Application sending the message acknowledgment / response
3.1	Namespace ID	R	1	IS	20	"JCR"
4	Sending Facility	R	1	HD	227	Facility sending the message acknowledgment / response
4.1	Namespace ID	R	1	IS	20	"MEH"
5	Receiving Application	R	1	HD	227	Application that receives the message
5.1	Namespace ID	R	1	HD	20	"EMR-000"
6	Receiving Facility	R	1	HD	227	Facility that receives the message
6.1	Namespace ID	R	1	IS	20	"AAA"
7	Date/Time Of Message	R	1	TS	26	Date/time the message was created YYYYMMDDHHMMSS Application will assume timestamp of GMT-6 (Central Time)
9	Message Type	R	1	MSG	15	"RSP^K21^RSP_K21"
9.1	Message Type	R	1	ID	3	RSP

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
9.2	Trigger Event	R	1	ID	3	K21
9.3	Message Structure	R	1	ID	7	RSP_K21
10	Message Control ID	R	1	ST	20	Number or other that uniquely identifies the message, the receiving system echoes this ID back in the message acknowledgement
11	Processing ID	R	1	PT	3	Field is used to define whether to process the message “P” – Production, “D” – Testing, “T” – Training
12	Version ID	R	1	VID	5	“2.5.1”

MSA – Message Acknowledgment Segment

Table 12: Get Person Demographics Response - MSA

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Acknowledgement Code	R	1	ID	2	Will always be set to “AA”, all errors are will be handled in the SOAP Fault
2	Message Control ID	R	1	ST	20	Set to Message Control ID on MSH from input message

QAK – Query Acknowledgment Segment

Table 13: Get Person Demographics Response - QAK

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Query Tag	R	1	ST	32	Unique query identifier used for tracking purposes; generated by the sending application, QPD2 is required QAK1 will contain the QPD2 value
2	Query Response Status	R	1	ID	2	Useful when no data is found and there was no error E.g. OK, NF – (NF = Not Found) All other errors will be handled in a SOAP Fault
3	Message Query Name	R	1	CE	250	Message Query Name
3.1	Identifier	R	1	ST	3	“Q21”
3.2	Text	O	1	ST	128	“Get Person Demographics”
4	Hit Count Total	R	1	NM	3	Contains the total number of matching records by that the Server sent in the current response

QPD – Query Parameter Definition Segment

Table 14: Get Person Demographics Response - QPD

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Message Query Name	R	1	CE	250	
1.1	Identifier	R	1	ST	3	Message Query Name “K21”
1.2	Text	O	1	ST	128	”Get Person Demographics”
2	Query Tag	R	1	ST	32	Unique query identifier used to match a response message to the originating query, Value is echoed back in the first field of QAK segment in the response
3	Person Identifier	R	1	CX	250	Only valid identifiers for this query is a Manitoba PHIN
3.1	ID Number	R	1	ST	15	Field contains one identifier
3.4	Assigning Authority	R	1	HD	44	
3.4.1	Namespace ID	R	1	IS	20	Authority that created the identifier (CANMB-JHI)
3.5	Identifier Type Code	R	1	ID	5	Identifier Type Codes (JHNMB)
3.6	Assigning Facility	O	1	HD	227	Assigning Facility (MBH)
3.6.1	Namespace ID	O	1	IS	20	Facility Codes

PID – Patient Identification Segment

Table 15: Get Person Demographics Response - PID

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Set ID - PID	R	1	SI	4	Field contains the number that identifies segment order First occurrence of this segment is field 1, second occurrence of this field is 2, etc.... for the Q21 only one segment will be sent
3	Patient Identifier List	R	1..*	CX	250	Field contains list of identifiers
3.1	ID	R	1	ST	15	Patient Identifier
3.4	Assigning Authority	R	1	HD	227	
3.4.1	Namespace ID	R	1	IS	20	
3.5	Identifier Type Code	R	1	ID	5	
3.6	Assigning Facility	O	1	HD	227	
3.6.1	Namespace ID	O	1	IS	20	
3.7	Effective Date	O	1	DT	8	YYYYMMDD
3.8	Expiration Date	O	1	DT	8	YYYYMMDD
5	Patient Name	R	1..*	XPN	250	Names of the patient, primary or legal name is reported first
5.1	Family Name	R	1	FN	55	
5.1.1	Surname	R	1	ST	50	

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
5.2	Given Name	R	1	ST	50	
5.3	Second & Further Given	R	1	ST	50	Second and further given names or initials thereof
5.7	Name Type Code	R	1	ID	1	Refer to table 7.6 Name Type (HL7 - 0200) for list of name type codes
7	Date/Time of Birth	O	1	TS	26	Only the date of birth not the time will be returned YYYYMMDD e.g. 19650509
7.1	Date/Time	R	1	ST	24	Only the date of birth not the time will be returned YYYYMMDD e.g. 19650509
8	Administrative Sex	O	1	IS	1	Refer to table 7.8 Gender/ Administrative Sex (HL7 - 001)
11	Patient Address	O	1..*	XAD	250	Field contains the addresses of the patient, for backward compatibility the mailing address must be sent first
11.1	Street Address	O	1	SAD	125	
11.1.1	Street or Mailing Address	R	1	ST	120	
11.2	Other Designation	O	1	ST	70	
11.3	City	O	1	ST	30	
11.4	Province / State	O	1	ST	2	
11.5	Postal Code / Zip	O	1	ST	12	
11.6	Country	O	1	ST	3	CR does not guarantee only ISO country abbreviation (HL70399)
11.7	Address Type	R	1	ID	3	Refer to table 7.7 Address Type (HL7 - 0190)
13	Phone Number - Home	O	1..*	XTN	250	Field contains the patient's personal telephone number
13.2	Telecom Use Code	O	1	ID	15	Telecommunications Equipment Use Code 7.4 Telecommunication Use Code (HL7 - 0201)
13.3	Telecom Eq. Type Code	R	1	ID	8	Telecommunications Equipment Type Code 7.5 Telecommunication Equipment Type (HL7 - 0202)
13.6	Area/city code	O	1	NM	5	If the area code is not numeric it is not returned, the rest of the number and extension are returned
13.7	Phone Number	R	1	NM	9	If the number portion is not numeric the entire phone number is not returned
13.8	Extension	O	1	NM	5	If the extension is not numeric it is not returned, the rest of the number and area code are returned
14	Phone Number - Business	O	1..*	XTN	250	Field contains the patient's business telephone number
14.2	Telecom Use Code	O	1	ID	15	Telecommunications Equipment Use Code 7.4 Telecommunication Use Code (HL7 - 0201)
14.3	Telecom Eq. Type Code	R	1	ID	8	Telecommunications Equipment Type Code 7.5 Telecommunication Equipment Type (HL7 - 0202)

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
14.6	Area/city code	O	1	NM	5	If the area code is not numeric it is not returned the rest of the number and extension are returned
14.7	Phone Number	R	1	NM	9	If the number portion is not numeric the entire phone number is not returned
14.8	Extension	O	1	NM	5	If the extension is not numeric it is not returned the rest of the number and area code are returned
29	Patient Death Date and Time	O	1	TS	26	
29.1	Date/Time	R	1	ST	24	Only the date portion will be returned YYYYMMDD e.g. 19950509
30	Patient Death Indicator	O	1	ID	1	This field indicates whether the patient is deceased Y = deceased N or blank means not deceased Note: Patient Death Date and Patient Death Indicator attributes are not tied together It may happen that there is no death date and indicator is Y, in many cases the ADT sending the information doesn't support the death date indicator and therefore it will rarely be populated

ZPI – PID Extension

Table 16: Get Person Demographics Response – ZPI – PID

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Cancel Code	O	1	CE	500	This field indicates the status of the patient's Manitoba Health insurance, the value will only be populated if Manitoba Health provided data for this patient
1.1	Cancel Code	R	1	ST	250	Cancel code provided by the service
1.2	Cancel Code Description	R	1	ST	250	Cancel code description provided by the service
2	Deceased Notification	O	1	IS	250	A field that contains a special status derived from the patient information in regards to the patient death
3	Coverage Notification	O	1	IS	250	A field that contains a special status derived from the patient information in regards to inactive Manitoba coverage

SOAP Response Sample

```

<soapenv:Body>
  <NS1:RSP_K21 xmlns:NS1="urn:h17-org:v2xml">
    <NS1:MSH>
      <NS1:MSH.1>|</NS1:MSH.1>
      <NS1:MSH.2>^~\&amp;</NS1:MSH.2>
      <NS1:MSH.3>
        <NS1:HD.1>JCR</NS1:HD.1>
      </NS1:MSH.3>
      <NS1:MSH.4>
        <NS1:HD.1>MEH</NS1:HD.1>
      </NS1:MSH.4>
      <NS1:MSH.5>
        <NS1:HD.1>EMRID</NS1:HD.1>
      </NS1:MSH.5>
      <NS1:MSH.6>
        <NS1:HD.1>ClinicID</NS1:HD.1>
      </NS1:MSH.6>
      <NS1:MSH.7>
        <NS1:TS.1>20180530100858</NS1:TS.1>
      </NS1:MSH.7>
      <NS1:MSH.9>
        <NS1:MSG.1>RSP</NS1:MSG.1>
        <NS1:MSG.2>K21</NS1:MSG.2>
        <NS1:MSG.3>RSP_K21</NS1:MSG.3>
      </NS1:MSH.9>
      <NS1:MSH.10>60bb2262-641b-11e8-a909-ac1541700000</NS1:MSH.10>
      <NS1:MSH.11>
        <NS1:PT.1>P</NS1:PT.1>
      </NS1:MSH.11>
      <NS1:MSH.12>
        <NS1:VID.1>2.5.1</NS1:VID.1>
      </NS1:MSH.12>
    </NS1:MSH>
    <NS1:MSA>
      <NS1:MSA.1>AA</NS1:MSA.1>
      <NS1:MSA.2>0001</NS1:MSA.2>
    </NS1:MSA>
    <NS1:QAK>
      <NS1:QAK.1>0001</NS1:QAK.1>
      <NS1:QAK.2>AA</NS1:QAK.2>
      <NS1:QAK.3>
        <NS1:CE.1>Q21</NS1:CE.1>
        <NS1:CE.2>Get Person Demographics</NS1:CE.2>
      </NS1:QAK.3>
      <NS1:QAK.4>1</NS1:QAK.4>
    </NS1:QAK>
    <NS1:QPD>
      <NS1:QPD.1>
        <NS1:CE.1>K21</NS1:CE.1>
        <NS1:CE.2>Get Person Demographics</NS1:CE.2>
      </NS1:QPD.1>
      <NS1:QPD.2>0001</NS1:QPD.2>
      <NS1:QPD.3>
        <NS1:CX.1>922000119</NS1:CX.1>
        <NS1:CX.4>
          <NS1:HD.1>CANMB-JHI</NS1:HD.1>
        </NS1:CX.4>
      </NS1:QPD.3>
    </NS1:QPD>
  </NS1:RSP_K21>
</soapenv:Body>

```

```

    <NS1:CX.5>JHNMB</NS1:CX.5>
    <NS1:CX.6>
      <NS1:HD.1>MBH</NS1:HD.1>
    </NS1:CX.6>
  </NS1:QPD.3>
</NS1:QPD>
<NS1:RSP_K21.QUERY_RESPONSE>
  <NS1:PID>
    <NS1:PID.1>1</NS1:PID.1>
    <NS1:PID.3>
      <NS1:CX.1>922000119</NS1:CX.1>
      <NS1:CX.4>
        <NS1:HD.1>CANMB-JHI</NS1:HD.1>
      </NS1:CX.4>
      <NS1:CX.5>JHNMB</NS1:CX.5>
      <NS1:CX.6>
        <NS1:HD.1>MBH</NS1:HD.1>
      </NS1:CX.6>
      <NS1:CX.7>19800731</NS1:CX.7>
      <NS1:CX.8>20160530</NS1:CX.8>
    </NS1:PID.3>
  <NS1:PID.3>
    <NS1:CX.1>990999</NS1:CX.1>
    <NS1:CX.4>
      <NS1:HD.1>CANMB-JHI</NS1:HD.1>
    </NS1:CX.4>
    <NS1:CX.5>HIC</NS1:CX.5>
    <NS1:CX.6>
      <NS1:HD.1>MBH</NS1:HD.1>
    </NS1:CX.6>
  </NS1:PID.3>
<NS1:PID.5>
  <NS1:XPN.1>
    <NS1:FN.1>Turtle</NS1:FN.1>
  </NS1:XPN.1>
  <NS1:XPN.2>Pie</NS1:XPN.2>
  <NS1:XPN.7>L</NS1:XPN.7>
</NS1:PID.5>
<NS1:PID.5>
  <NS1:XPN.1>
    <NS1:FN.1>Turtle</NS1:FN.1>
  </NS1:XPN.1>
  <NS1:XPN.2>Pie</NS1:XPN.2>
  <NS1:XPN.7>I</NS1:XPN.7>
</NS1:PID.5>
<NS1:PID.8>M</NS1:PID.8>
<NS1:PID.11>
  <NS1:XAD.1>
    <NS1:SAD.1>20 North Shore Test Rd</NS1:SAD.1>
  </NS1:XAD.1>
  <NS1:XAD.2/>
  <NS1:XAD.3>Winnipeg</NS1:XAD.3>
  <NS1:XAD.4>MB</NS1:XAD.4>
  <NS1:XAD.5/>
  <NS1:XAD.6>CAN</NS1:XAD.6>
  <NS1:XAD.7>H</NS1:XAD.7>
</NS1:PID.11>
<NS1:PID.11>
  <NS1:XAD.1>

```

```

        <NS1:SAD.1>555 Main Street</NS1:SAD.1>
    </NS1:XAD.1>
    <NS1:XAD.3>Selkirk</NS1:XAD.3>
    <NS1:XAD.5>R2K0T5</NS1:XAD.5>
    <NS1:XAD.6>Manitoba</NS1:XAD.6>
    <NS1:XAD.7>M</NS1:XAD.7>
</NS1:PID.11>
<NS1:PID.13>
    <NS1:XTN.2>PRN</NS1:XTN.2>
    <NS1:XTN.3>PH</NS1:XTN.3>
    <NS1:XTN.6>204</NS1:XTN.6>
    <NS1:XTN.7>2334444</NS1:XTN.7>
    <NS1:XTN.8/>
</NS1:PID.13>
<NS1:PID.13>
    <NS1:XTN.3>CP</NS1:XTN.3>
    <NS1:XTN.6>204</NS1:XTN.6>
    <NS1:XTN.7>5558989</NS1:XTN.7>
</NS1:PID.13>
</NS1:PID>
</NS1:RSP_K21.QUERY_RESPONSE>
</NS1:RSP_K21>
</soapenv:Body>

```

6.2.3 Find Candidates Operation

Returns a list of candidates matching queried demographics information. The following sections describe the segments and fields within the request and response messages.

QBP_Q22 – REQUEST

Table 17: Find Candidates Request - Structure

SEGMENT	DESCRIPTION
MSH	Message Header
QPD	Query Parameter Definition
ZEV	Custom segment

MSH – Message Header Segment

Table 18: Find Candidates Request - MSH

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Field Separator	R	1	ST	1	" "
2	Encoding Characters	R	1	ST	4	"^~\amp;,"
3	Sending Application	R	1	HD	227	EMR ID - Unique identifier assigned to the EMR instance by Shared Health
3.1	Namespace ID	R	1	IS	20	"EMR-000"
4	Sending Facility	R	1	HD	227	Clinic Id - Unique identifier assigned to the clinic by Shared Health
4.1	Namespace ID	R	1	IS	20	"AAA"
5	Receiving Application	R	1	HD	227	Application that receives the message
5.1	Namespace ID	R	1	HD	20	"JCR"
6	Receiving Facility	R	1	HD	227	Facility that receives the message
6.1	Namespace ID	R	1	IS	20	"MEH"
7	Date/Time Of Message	R	1	TS	26	Date/time the message was created YYYYMMDDHHMMSS Application will assume timestamp of GMT-6 (Central Time)
9	Message Type	R	1	MSG	15	"QBP^Q22^QBP_Q21"
9.1	Message Type	R	1	ID	3	QBP
9.2	Trigger Event	R	1	ID	3	Q22
9.3	Message Structure	R	1	ID	7	QBP_Q21
10	Message Control ID	R	1	ST	36	Number or other that uniquely identifies the message, the receiving system echoes this ID back in the message acknowledgement

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
11	Processing ID	R	1	PT	3	Field is used to define whether to process the message "P" – Production, "D" – Testing, "T" – Training
12	Version ID	R	1	VID	5	"2.5.1"

QPD – Query Parameter Definition Segment

Table 19: Find Candidates Request - QPD

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Message Query Name	R	1	CE	250	
1.1	Identifier	R	1	ST	3	Message Query Name "K22"
1.2	Text	O	1	ST	128	"Find Candidates Operation"
2	Query Tag	R	1	ST	32	Unique query identifier used to match a response message to the originating query, this value is echoed back in the first field of QAK segment in the response
3	Demographics Fields	R	1...*	QIP	211	Demographic search is described as components of PID Segment See the 6.2.4 QPD3 Search Parameter section
3.1	Segment Field ID	R	1	ST	15	@<seg>.<field no>.<component no>.<subcomponent no>
3.2	Values	R	1	ST	199	Components may be any field in the PID as described in section 6.2.4 QPD3 Search Parameter section

ZEV – Custom Segment (Other Information)

Table 20: Find Candidates Request - ZEV

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Operator ID	R	1	XCN	350	If an operator ID is not present the query will return an error
1.1	ID	R	1	ST	250	An identifier of the operator of the source system, can be the username used to log into the client application
1.2	Family Name	O	1	FN		
1.2.1	Surname	O	1	ST	50	Surname of the Operator If the surname is not available because it is a required field by convention provided the Operator ID a second time
1.3	Given Name	R	1	ST	50	Given name/s of the Operator if available
2	Client EMR Information	R	1	XCN	350	
2.1	EMR Name	R	1	ST	250	EMR Application Name
2.2	EMR Version	R	1	ST	250	EMR Application Version

SOAP Request Sample

```

<soapenv:Body>
  <urn:QBP_Q22>
    <urn:MSH>
      <urn:MSH.1>|</urn:MSH.1>
      <urn:MSH.2>^~\&amp;</urn:MSH.2>
      <urn:MSH.3>
        <urn:HD.1>EMRID</urn:HD.1>
      </urn:MSH.3>
      <urn:MSH.4>
        <urn:HD.1>ClinicID</urn:HD.1>
      </urn:MSH.4>
      <urn:MSH.5>
        <urn:HD.1>JCR</urn:HD.1>
      </urn:MSH.5>
      <urn:MSH.6>
        <urn:HD.1>MEH</urn:HD.1>
      </urn:MSH.6>
      <urn:MSH.7>
        <urn:TS.1>20180321010101</urn:TS.1>
      </urn:MSH.7>
      <urn:MSH.9>
        <urn:MSG.1>QBP</urn:MSG.1>
        <urn:MSG.2>Q22</urn:MSG.2>
        <urn:MSG.3>QBP_Q21</urn:MSG.3>
      </urn:MSH.9>
      <urn:MSH.10>0004</urn:MSH.10>
      <urn:MSH.11>
        <urn:PT.1>P</urn:PT.1>
      </urn:MSH.11>
      <urn:MSH.12>
        <urn:VID.1>2.5.1</urn:VID.1>
      </urn:MSH.12>
    </urn:MSH>
  <urn:QPD>
    <urn:QPD.1>
      <urn:CE.1>Q22</urn:CE.1>
      <urn:CE.2>Find Candidates</urn:CE.2>
    </urn:QPD.1>
    <urn:QPD.2>0004</urn:QPD.2>
    <urn:QPD.3>
      <urn:QIP.1>@PID.3.1</urn:QIP.1>
      <urn:QIP.2>908084536</urn:QIP.2>
    </urn:QPD.3>
    <urn:QPD.3>
      <urn:QIP.1>@PID.3.4</urn:QIP.1>
      <urn:QIP.2>CANMB-JHI</urn:QIP.2>
    </urn:QPD.3>
    <urn:QPD.3>
      <urn:QIP.1>@PID.3.5</urn:QIP.1>
      <urn:QIP.2>JHNMB</urn:QIP.2>
    </urn:QPD.3>
  </urn:QPD.3>

```

```

        <urn:QIP.1>@PID.3.6</urn:QIP.1>
        <urn:QIP.2>MBH</urn:QIP.2>
    </urn:QPD.3>
    <urn:QPD.3>
        <urn:QIP.1>@PID.5.1</urn:QIP.1>
        <urn:QIP.2>Testacct</urn:QIP.2>
    </urn:QPD.3>
    <urn:QPD.3>
        <urn:QIP.1>@PID.5.2</urn:QIP.1>
        <urn:QIP.2>Uptimes</urn:QIP.2>
    </urn:QPD.3>
    <urn:QPD.3>
<urn:QIP.1>@PID.7</urn:QIP.1>
<urn:QIP.2>19750625</urn:QIP.2>
</urn:QPD.3>
<urn:QPD.3>
    <urn:QIP.1>@PID.8</urn:QIP.1>
    <urn:QIP.2>F</urn:QIP.2>
</urn:QPD.3>
<urn:QPD.3>
    <urn:QIP.1>@PID.11.1</urn:QIP.1>
    <urn:QIP.2>33 Wrong Lane, Wrong, MB</urn:QIP.2>
</urn:QPD.3>
<urn:QPD.3>
    <urn:QIP.1>@PID.11.5</urn:QIP.1>
    <urn:QIP.2>R0Y0Y0</urn:QIP.2>
</urn:QPD.3>
<urn:QPD.3>
    <urn:QIP.1>@PID.13.1</urn:QIP.1>
    <urn:QIP.2>2045558976</urn:QIP.2>
</urn:QPD.3>
</urn:QPD>
<urn:ZEV>
    <urn:ZEV.1>
        <urn:XCN.1>TestID</urn:XCN.1>
        <urn:XCN.2>
            <urn:FN.1>LastName</urn:FN.1>
        </urn:XCN.2>
        <urn:XCN.3>FirstName</urn:XCN.3>
    </urn:ZEV.1>
    <urn:ZEV.2>
        <urn:HD.1>Test App</urn:HD.1>
        <urn:HD.2>v1.0</urn:HD.2>
    </urn:ZEV.2>
</urn:ZEV>
</urn:QBP_Q22>
</soapenv:Body>

```

RSP_K22 – RESPONSE

Table 21: Find Candidates Response - Structure

SEGMENT	DESCRIPTION
MSH	Message Header
MSA	Message Acknowledgement
QAK	Query Acknowledgement
QPD	Query Parameter Definition
{	Query Response Group Start
PID	Patient Identifier
[ZPI]	PID Extension
QRI	Query Response Instance
}	Query Response Group End

{ } - Denotes one or more repetitions of the enclosed segment(s).

[] - Denotes that the enclosed segment(s) is (are) optional.

MSH – Message Header Segment

Table 22: Find Candidates Response - MSH

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Field Separator	R	1	ST	1	" "
2	Encoding Characters	R	1	ST	4	"^~\amp;,"
3	Sending Application	R	1	HD	227	Application sending the message acknowledgment / response
3.1	Namespace ID	R	1	IS	20	"JCR"
4	Sending Facility	R	1	HD	227	Facility sending the message acknowledgment / response
4.1	Namespace ID	R	1	IS	20	"MEH"
5	Receiving Application	R	1	HD	227	Application that receives the message
5.1	Namespace ID	R	1	HD	20	"EMR-000"
6	Receiving Facility	R	1	HD	227	Facility that receives the message
6.1	Namespace ID	R	1	IS	20	"AAA"
7	Date/Time Of Message	R	1	TS	26	Date/time the message was created YYYYMMDDHHMMSS Application will assume timestamp of GMT-6 (Central Time)

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
9	Message Type	R	1	MSG	15	"RSP^K22^RSP_K21"
9.1	Message Type	R	1	ID	3	RSP
9.2	Trigger Event	R	1	ID	3	K22
9.3	Message Structure	R	1	ID	7	RSP_K21
10	Message Control ID	R	1	ST	20	Number or other that uniquely identifies the message, the receiving system echoes this ID back in the message acknowledgement.
11	Processing ID	R	1	PT	3	Field is used to define whether to process the message "P" – Production, "D" – Testing, "T" – Training
12	Version ID	R	1	VID	5	"2.5.1"

MSA – Message Acknowledgment Segment

Table 23: Find Candidates Response - MSA

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Acknowledgement Code	R	1	ID	2	Indication of success/failure of message; Receiving Applications will set "AA" for successful. All errors are handled in a SOAP fault
2	Message Control ID	R	1	ST	20	Set to Message Control ID on MSH from input message

QAK – Query Acknowledgment Segment

Table 24: Find Candidates Response - QAK

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Query Tag	R	1	ST	32	Unique query identifier used for tracking purposes; generated by the sending application, QPD2 is required QAK1 will contain the QPD2 value
2	Query Response Status	R	1	ID	2	Response status. Especially useful when no data is found and there was no error E.g. OK, NF (Not Found)
3	Message Query Name	R	1	CE	250	
3.1	Identifier	R	1	ST	3	Message Query Name "Q22"
3.2	Text	RE	1	ST	128	"Find Candidates"
4	Hit Count Total	R	1	NM	3	Contains the total number of matching records that the Server sent in the current response

QPD – Query Parameter Definition Segment

Table 25: Find Candidates Response - QPD

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Message Query Name	R	1	CE	250	
1.1	Identifier	R	1	ST	3	Message Query Name "K22"
1.2	Text	O	1	ST	128	"Find Candidates Operation"
2	Query Tag	R	1	ST	32	Unique query identifier used to match a response message to the originating query This value is echoed back in the first field of QAK segment in the response
3	Demographics Fields	R	1..*	QIP	211	Demographic search is described as components of PID Segment See the 6.2.4 QPD3 Search Parameter section
3.1	Segment Field ID	R	1	ST	15	@<seg>.<field no>.<component no>.<subcomponent no>
3.2	Values	R	1	ST	199	Components may be any field in the PID as described in section 6.2.4 QPD3 Search Parameter section

PID – Patient Identification Segment

Table 26: Find Candidates Response - PID

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Set ID - PID	R	1	SI	4	Field contains the number that identifies segment order First occurrence of this segment is field 1, second occurrence of this field is 2, etc.... for the Q21 only one segment will be sent
3	Patient Identifier List	O	1..*	CX	250	Field contains list of identifiers
3.1	ID	R	1	ST	15	Patient Identifier
3.4	Assigning Authority	R	1	HD	227	
3.4.1	Namespace ID	R	1	IS	20	
3.5	Identifier Type Code	R	1	ID	5	
3.6	Assigning Facility	O	1	HD	227	
3.6.1	Namespace ID	O	1	IS	20	
3.7	Effective Date	O	1	DT	8	YYYYMMDD
3.8	Expiration Date	O	1	DT	8	YYYYMMDD
5	Patient Name	R	1..*	XPN	250	Names of the patient, primary or legal name is reported first
5.1	Family Name	O	1	FN	55	
5.1.1	Surname	O	1	ST	50	
5.2	Given Name	O	1	ST	50	

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
5.3	Second & Further Given	O	1	ST	50	Second and further given names or initials thereof
5.7	Name Type Code	O	1	ID	1	Refer to table 7.6 Name Type (HL7 - 0200) for list of name type codes
7	Date/Time of Birth	O	1	TS	26	Only the date of birth not the time will be returned YYYYMMDD e.g. 19650509
7.1	Date/Time	R	1	ST	24	Only the date of birth not the time will be returned YYYYMMDD e.g. 19650509
8	Administrative Sex	O	1	IS	1	Refer to table 7.8 Gender/ Administrative Sex (HL7 - 001)
11	Patient Address	O	1..*	XAD	250	Field contains the addresses of the patient, for backward compatibility the mailing address must be sent first
11.1	Street Address	O	1	SAD	125	
11.1.1	Street or Mailing Address	R	1	ST	120	
11.2	Other Designation	O	1	ST	70	
11.3	City	O	1	ST	30	
11.4	Province / State	O	1	ST	2	
11.5	Postal Code / Zip	O	1	ST	12	
11.6	Country	O	1	ST	3	CR does not guarantee only ISO country abbreviation (HL70399)
11.7	Address Type	R	1	ID	3	Refer to table 7.7 Address Type (HL7 - 0190)
13	Phone Number - Home	O	1..*	XTN	250	Field contains the patient's personal telephone number
13.2	Telecom Use Code	O	1	ID	15	Telecommunications Equipment Use Code 7.4 Telecommunication Use Code (HL7 - 0201)
13.3	Telecom Eq. Type Code	R	1	ID	8	Telecommunications Equipment Type Code 7.5 Telecommunication Equipment Type (HL7 - 0202)
13.6	Area/city code	O	1	NM	5	If the area code is not numeric it is not returned, the rest of the number and extension are returned
13.7	Phone Number	R	1	NM	9	If the number portion is not numeric the entire phone number is not returned
13.8	Extension	O	1	NM	5	If the extension is not numeric it is not returned, the rest of the number and area code are returned
14	Phone Number - Business	O	1..*	XTN	250	Field contains the patient's business telephone number
14.2	Telecom Use Code	O	1	ID	15	Telecommunications Equipment Use Code 7.4 Telecommunication Use Code (HL7 - 0201)
14.3	Telecom Eq. Type Code	R	1	ID	8	Telecommunications Equipment Type Code 7.5 Telecommunication Equipment Type (HL7 - 0202)
14.6	Area/city code	O	1	NM	5	If the area code is not numeric it is not returned, the rest of the number and extension are returned

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
14.7	Phone Number	R	1	NM	9	If the number portion is not numeric the entire phone number is not returned
14.8	Extension	O	1	NM	5	If the extension is not numeric it is not returned, the rest of the number and area code are returned
29	Patient Death Date and Time	O	1	TS	26	
29.1	Date/Time	R	1	ST	24	Only the date portion will be returned YYYYMMDD e.g. 19950509
30	Patient Death Indicator	O	1	ID	1	This field indicates whether the patient is deceased Y = deceased N or blank means not deceased

ZPI – PID Extension

Table 27: Find Candidates Response - ZPI

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Cancel Code	O	1	CE	500	Field indicates the status of the patient's Manitoba Health insurance, the value will only be populated if Manitoba Health provided data for this patient
1.1	Cancel Code	R	1	ST	250	Cancel code provided by the service
1.2	Cancel Code Description	R	1	ST	250	Cancel code description provided by the service
2	Deceased Notification	O	1	IS	250	Field that contains a special status derived from the patient information in regards to the patient death
3	Coverage Notification	O	1	IS	250	Field that contains a special status derived from the patient information in regards to an inactive PHIN

QRI – Query Response Instance

Table 28: Find Candidates Response - QRI

SEQ	NAME	USAGE	REPETITION	DATA TYPE	MAX LEN	NOTES
1	Candidate Confidence	R	1	NM	10	Field contains a numeric value indicating the confidence level associated with the record

SOAP Response Sample

```

<soapenv:Body>
  <NS1:RSP_K22 xmlns:NS1="urn:hl7-org:v2xml">
    <NS1:MSH>
      <NS1:MSH.1>|</NS1:MSH.1>
      <NS1:MSH.2>^~\&amp;</NS1:MSH.2>
      <NS1:MSH.3>
        <NS1:HD.1>JCR</NS1:HD.1>
      </NS1:MSH.3>
      <NS1:MSH.4>
        <NS1:HD.1>MEH</NS1:HD.1>
      </NS1:MSH.4>
      <NS1:MSH.5>
        <NS1:HD.1>EMRID</NS1:HD.1>
      </NS1:MSH.5>
      <NS1:MSH.6>
        <NS1:HD.1>ClinicID</NS1:HD.1>
      </NS1:MSH.6>
      <NS1:MSH.7>
        <NS1:TS.1>20180530140810</NS1:TS.1>
      </NS1:MSH.7>
      <NS1:MSH.9>
        <NS1:MSG.1>RSP</NS1:MSG.1>
        <NS1:MSG.2>K22</NS1:MSG.2>
        <NS1:MSG.3>RSP_K21</NS1:MSG.3>
      </NS1:MSH.9>
      <NS1:MSH.10>cb14da42-643c-11e8-a909-ac1541700000</NS1:MSH.10>
      <NS1:MSH.11>
        <NS1:PT.1>P</NS1:PT.1>
      </NS1:MSH.11>
      <NS1:MSH.12>
        <NS1:VID.1>2.5.1</NS1:VID.1>
      </NS1:MSH.12>
    </NS1:MSH>
    <NS1:MSA>
      <NS1:MSA.1>AA</NS1:MSA.1>
      <NS1:MSA.2>0004</NS1:MSA.2>
    </NS1:MSA>
    <NS1:QAK>
      <NS1:QAK.1>0004</NS1:QAK.1>
      <NS1:QAK.2>AA</NS1:QAK.2>
      <NS1:QAK.3>
        <NS1:CE.1>Q22</NS1:CE.1>
        <NS1:CE.2>Find Candidates</NS1:CE.2>
      </NS1:QAK.3>
      <NS1:QAK.4>1</NS1:QAK.4>
    </NS1:QAK>
    <NS1:QPD>
      <NS1:QPD.1>
        <NS1:CE.1>K22</NS1:CE.1>
        <NS1:CE.2>Find Candidates</NS1:CE.2>
      </NS1:QPD.1>
      <NS1:QPD.2>0004</NS1:QPD.2>
    </NS1:QPD>
  </NS1:RSP_K22>
</soapenv:Body>

```



```
<NS1:QPD.3>
  <NS1:QIP.1>@PID.3.1</NS1:QIP.1>
  <NS1:QIP.2>908084536</NS1:QIP.2>
</NS1:QPD.3>
<NS1:QPD.3>
  <NS1:QIP.1>@PID.3.4</NS1:QIP.1>
  <NS1:QIP.2>CANMB-JHI</NS1:QIP.2>
</NS1:QPD.3>
<NS1:QPD.3>
  <NS1:QIP.1>@PID.3.5</NS1:QIP.1>
  <NS1:QIP.2>JHNMB</NS1:QIP.2>
</NS1:QPD.3>
<NS1:QPD.3>
  <NS1:QIP.1>@PID.3.6</NS1:QIP.1>
  <NS1:QIP.2>MBH</NS1:QIP.2>
</NS1:QPD.3>
<NS1:QPD.3>
  <NS1:QIP.1>@PID.5.1</NS1:QIP.1>
  <NS1:QIP.2>Testacct</NS1:QIP.2>
</NS1:QPD.3>
<NS1:QPD.3>
  <NS1:QIP.1>@PID.5.2</NS1:QIP.1>
  <NS1:QIP.2>Uptimes</NS1:QIP.2>
</NS1:QPD.3>
<NS1:QPD.3>
  <NS1:QIP.1>@PID.7</NS1:QIP.1>
  <NS1:QIP.2>19750625</NS1:QIP.2>
</NS1:QPD.3>
<NS1:QPD.3>
  <NS1:QIP.1>@PID.8</NS1:QIP.1>
  <NS1:QIP.2>F</NS1:QIP.2>
</NS1:QPD.3>
<NS1:QPD.3>
  <NS1:QIP.1>@PID.11.1</NS1:QIP.1>
  <NS1:QIP.2>33 Wrong Lane, Wrong, MB</NS1:QIP.2>
</NS1:QPD.3>
<NS1:QPD.3>
  <NS1:QIP.1>@PID.11.5</NS1:QIP.1>
  <NS1:QIP.2>R0Y0Y0</NS1:QIP.2>
</NS1:QPD.3>
<NS1:QPD.3>
  <NS1:QIP.1>@PID.13.1</NS1:QIP.1>
  <NS1:QIP.2>2045558976</NS1:QIP.2>
</NS1:QPD.3>
</NS1:QPD>
<NS1:RSP_K22.QUERY_RESPONSE>
  <NS1:PID>
    <NS1:PID.1>1</NS1:PID.1>
    <NS1:PID.3>
      <NS1:CX.1>908084536</NS1:CX.1>
      <NS1:CX.4>
        <NS1:HD.1>CANMB-JHI</NS1:HD.1>
      </NS1:CX.4>
      <NS1:CX.5>JHNMB</NS1:CX.5>
```

```

        <NS1:CX.6>
            <NS1:HD.1>MBH</NS1:HD.1>
        </NS1:CX.6>
    </NS1:PID.3>
    <NS1:PID.3>
        <NS1:CX.1>111111</NS1:CX.1>
        <NS1:CX.4>
            <NS1:HD.1>CANMB-JHI</NS1:HD.1>
        </NS1:CX.4>
        <NS1:CX.5>HIC</NS1:CX.5>
        <NS1:CX.6>
            <NS1:HD.1>MBH</NS1:HD.1>
        </NS1:CX.6>
    </NS1:PID.3>
    <NS1:PID.5>
        <NS1:XPN.1>
            <NS1:FN.1>DOWNTIME</NS1:FN.1>
        </NS1:XPN.1>
        <NS1:XPN.2>TESTACCT</NS1:XPN.2>
        <NS1:XPN.7>L</NS1:XPN.7>
    </NS1:PID.5>
    <NS1:PID.7>
        <NS1:TS.1>19121212</NS1:TS.1>
    </NS1:PID.7>
    <NS1:PID.8>UN</NS1:PID.8>
    <NS1:PID.11>
        <NS1:XAD.1>
            <NS1:SAD.1>33 LALALA LANE</NS1:SAD.1>
        </NS1:XAD.1>
        <NS1:XAD.2/>
        <NS1:XAD.3>ALEXANDER</NS1:XAD.3>
        <NS1:XAD.4>MB</NS1:XAD.4>
        <NS1:XAD.5>R0K0A0</NS1:XAD.5>
        <NS1:XAD.6>CAN</NS1:XAD.6>
        <NS1:XAD.7>H</NS1:XAD.7>
    </NS1:PID.11>
    <NS1:PID.11>
        <NS1:XAD.1>
            <NS1:SAD.1>588 Montroy</NS1:SAD.1>
        </NS1:XAD.1>
        <NS1:XAD.3>Grand Beach</NS1:XAD.3>
        <NS1:XAD.7>A</NS1:XAD.7>
    </NS1:PID.11>
    <NS1:PID.13>
        <NS1:XTN.2>PRN</NS1:XTN.2>
        <NS1:XTN.3>PH</NS1:XTN.3>
        <NS1:XTN.6>204</NS1:XTN.6>
        <NS1:XTN.7>7638765</NS1:XTN.7>
        <NS1:XTN.8/>
    </NS1:PID.13>
    <NS1:PID.14>
        <NS1:XTN.2>WPN</NS1:XTN.2>
        <NS1:XTN.3>PH</NS1:XTN.3>
        <NS1:XTN.6>204</NS1:XTN.6>

```

```

        <NS1:XTN.7>7889696</NS1:XTN.7>
        <NS1:XTN.8/>
    </NS1:PID.14>
</NS1:PID>
<NS1:QRI>
    <NS1:QRI.1>7</NS1:QRI.1>
</NS1:QRI>
</NS1:RSP_K22.QUERY_RESPONSE>
</NS1:RSP_K22>
</soapenv:Body>

```

6.2.4 QPD3 Search Parameters

The following sections describe the details and the structure of search parameters.

Ordering and Optionally

Every parameter could appear in the query in any order and can be optional. Health-care IDs are the exception to the rule; see the [Health-care IDs](#) section below for more detail.

NAME

The ordering of the name parameter values are not significant to the search. The algorithm will treat Robert Joseph Jordan and Jordan Joseph Robert in similar ways. Searching with the name in the right order can increase the score by approximately 0.2 to 0.4. The name parameter will be searched against all name types in the Client Registry.

XML Format

```

<QPD.3>
    <QIP.1>@PID.5.1</QIP.1>
    <QIP.2><family name></QIP.2>
</QPD.3>
<QPD.3>
    <QIP.1>@PID.5.2</QIP.1>
    <QIP.2><given name></QIP.2>
</QPD.3>
<QPD.3>
    <QIP.1>@PID.5.3</QIP.1>
    <QIP.2><middle name></QIP.2>
</QPD.3>

```

Implementation Note: @PID.5.1, @PID.5.2, @PID.5.3 can appear, at most only once each, in any order and with other parameters in between.

BIRTH DATE

The Provincial Client Registry supports searching on birth date. The search expects the birth date to be of the following format “YYYYMMDD”.

XML Format

```

<QPD.3>
    <QIP.1>@PID.7</QIP.1>
    <QIP.2><Date of Birth></QIP.2>

```

</QPD.3>

Implementation Note: If the birth date is not eight digits it will get dropped from the search and no error will be returned.

HEALTH-CARE IDS

There are multiple types of health-care IDs that can be searched and all share a similar structure. For a list of IDs see section [7.2 Permissible Identifiers for FindCandidates Operation \(990001\)](#).

XML Format

```
<QPD.3>
  <QIP.1>@PID.3.1</QIP.1>
  <QIP.2><ID></QIP.2>
</QPD.3>
<QPD.3>
  <QIP.1>@PID.3.4</QIP.1>
  <QIP.2><Assigning Authority></QIP.2>
</QPD.3>
<QPD.3>
  <QIP.1>@PID.3.5</QIP.1>
  <QIP.2><Identifier Type></QIP.2>
</QPD.3>
<QPD.3>
  <QIP.1>@PID.3.6</QIP.1>
  <QIP.2><Assigning Facility></QIP.2>
</QPD.3>
```

Implementation Note: @PID.3.1 will always be followed by a combination of @PID.3.4, @PID.3.5 and PID.3.6 in this order. @PID.3.4 and @PID.3.5 are required but PID.3.6 is optional.

GENDER

The Provincial CR supports searching on gender.

XML Format

```
<QPD.3>
  <QIP.1>@PID.8</QIP.1>
  <QIP.2><Gender></QIP.2>
</QPD.3>
```

Implementation Note: Gender is based on the [7.8 Gender/ Administrative Sex \(HL7 – 0001\)](#) table

PHONE NUMBER

The Provincial Client Registry supports searching on phone number. The CR Query Service will search both the home and cell phone. The work phone will not be searched.

XML Format

```
<QPD.3>
  <QIP.1>@PID.13.1</QIP.1>
  <QIP.2><phone number></QIP.2>
</QPD.3>
```

STREET ADDRESS

The Provincial Client Registry supports searching on street address.

XML Format

```
<QPD.3>
  <QIP.1>@PID.11.1</QIP.1>
  <QIP.2><street address></QIP.2>
</QPD.3>
```

Implementation Note: The street address search will search all address lines in the address field.

If you have three patients

Patient 1

Address line 1 = 24 ORANGE JULIUS STREET

Address line 2 = null

Patient 2

Address line 1 = 24 ORANGE JULIUS STREET

Address line 2 = APARTMENT BLOCK 2

Patient 3

Address line 1 = 24 ORANGE JULIUS STREET APARTMENT BLOCK 2

Address line 2 = null

The search @PID.11.1 = 24 ORANGE JULIUS STREET APARTMENT BLOCK 2 finds Patient 2 and 3 but not 1. CR considers Patient 2 and 3 address to be the same but different than Patient 3.

Therefore the @PID.11.1 = 24 ORANGE JULIUS STREET only finds Patient 1

POSTAL CODE

The Provincial CR supports searching on postal code or zip code.

XML Format

```
<QPD.3>
  <QIP.1>@PID.11.5</QIP.1>
  <QIP.2><postal code/zip code></QIP.2>
</QPD.3>
```

6.2.5 SOAP Fault Response

The SOAP Fault response is produced in the case of an error scenario as opposed to inclusion within the business context response.

Table 29: SOAP Fault Response - Structure

DIRECTION	PARAMETER	DESCRIPTION
Response	FaultCode	The identifier corresponding to a specific error.
	FaultString	The category code for a given error. Possible categories are CLIENT and SERVER to designate different error classification.
	Detail	Description of the given error contains: <ul style="list-style-type: none"> • ErrorID - The identifier corresponding to a specific error • ErrorType - The category code for a given error. Possible categories are CLIENT and SERVER to designate different error classification. • ErrorMessage - Description of the given error

ERROR SCENARIOS

There are two types of error scenarios pertaining to the CRQueryService transaction:

1. Server – There was a problem with the server such that the message could not be processed.
2. Client – The message was incorrectly formed or contained incorrect information or the EMR configuration was incorrect. The errors may be further subcategorized as:
 1. Business Errors – Characterized as errors in message retrieval with the CR Query Service. These can be trapped by the application and translated to application-specific language to provide context to the requestor as to the nature of the error.
 2. System Errors – Characterized as communication or transport-level errors. These may also include errors which address malformed messaging errors.

Note that the error messages are not encrypted.

ERROR CODES

The following list is a sample of the most common error scenarios that may occur:

Table 30: SOAP Fault Response – Error Codes

ERROR ID	ERROR TYPE	ERROR MESSAGE
5100	CLIENT	XML Schema validation error.
5300	CLIENT	EmrID (MSH.3) cannot be empty.
5305	CLIENT	ClinicID (MSH.4) cannot be empty.
5306	CLIENT	Destination Application (MSH.5) cannot be empty.
5307	CLIENT	Destination Facility (MSH.6) cannot be empty.
5310	CLIENT	TransactionID (MSH.10) cannot be empty.
5320	CLIENT	QPD3.4 cannot be empty.
5325	CLIENT	QPD3.5 cannot be empty.
5326	CLIENT	QPD3.6 cannot be empty.
5327	CLIENT	The health-care identifier values are not valid.
5328	CLIENT	Allowable minimum search criteria was not used.
5330	CLIENT	Family name PID.5.1 can only occur once.
5331	CLIENT	Given name PID.5.2 can only occur once.
5332	CLIENT	Middle name PID.5.3 can only occur once.
5333	CLIENT	Phone Number QPD3.2 format error (0000000000).
5335	CLIENT	QPD3.1 cannot be empty.
5340	CLIENT	QPD3.2 cannot be empty.
5345	CLIENT	ZEV1.1 cannot be empty.
5350	CLIENT	ZEV1.2 cannot be empty.
5400	CLIENT	Date of Birth QPD3.2 format error (YYYYMMDD).
5403	CLIENT	EMR Authentication Error!
5500	SERVER	CR Application Error Z## - <CR error message>
5551	SERVER	The CR Query Service max results limit has been reached, results are suppressed.
6000	SERVER	Client Registry is temporarily unavailable. Please contact Shared Health service desk if the problem persists.
6050	SERVER	No results found.

SOAP FAULT SAMPLE

```
<soapenv:Body>
  <soapenv:Fault>
    <faultcode>CLIENT</faultcode>
    <faultstring>ERROR</faultstring>
    <detail>
      <tns:ErrorDetailResponse>
        <ErrorID>5403</ErrorID>
        <ErrorType>CLIENT</ErrorType>
        <ErrorMessage>EMR Authentication Error!</ErrorMessage>
      </tns:ErrorDetailResponse>
    </detail>
  </soapenv:Fault>
</soapenv:Body>
```

7 Appendix B: Permissible Values

7.1 Client Registry Query Service Data Elements

Table 31: Client Registry Query Service Data Elements

DATA ELEMENT	DESCRIPTION
Name	First name, last name, and middle name tokens
PHIN and/or health-care Identifiers	See Section 7.2 Permissible Identifiers for FindCandidates Operation (990001)
Birth Date	See Section 6.2.4 QPD3 Search Parameters
Gender	
Postal Code	
Phone Number	
Street Address	

7.2 Permissible Identifiers for FindCandidates Operation (990001)

Table 32: Permissible Identifiers for FindCandidates Operation (990001)

DESCRIPTION	CR QUERY SERVICE INTERFACE		
	ASSIGNING AUTHORITY PID3.4	IDENTIFIER TYPE CODE PID3.5	ASSIGNING FACILITY PID3.6
Alberta PHN	CANAB	JHNAB	
Canadian Armed Forces	CANARMF	JHNAF	
British Columbia PHN	CANBC	JHNBC	
New Brunswick Medicare No	CANNB	JHNNB	
Newfoundland Med Services No	CANNL	JHNNL	
Nova Scotia Med Services No	CANNS	JHNNS	
Northwest Territories Health-care No	CANNT	JHNNT	
Nunavut Health-care No	CANNU	JHNNU	
Ontario Health-care No	CANON	JHNON	
Prince Edward Island Health-care No	CANPE	JHNPE	
Quebec HCN	CANQC	JHNQC	
Saskatchewan Health Services No	CANSK	JHNSK	
Yukon Territory Health-care No	CANYT	JHNYT	
Veterans Affairs CA	CANVAFF	JHNVA	
Manitoba PHIN	CANMB-JHI	JHNMB	MBH
MHRN	CANMB-JHI	HIC	MBH

7.3 Query Response Status (HL7 – 0208)

Table 33: Query Response Status (HL7 – 0208)

CODE	DESCRIPTION
NF	No data found, no errors
OK	Data found, no errors (default value)

7.4 Telecommunication Use Code (HL7 – 0201)

Table 34: Telecommunication Use Code (HL7 – 0201)

CODE	DESCRIPTION
PRN	Primary Residence Number
WPN	Work Number

7.5 Telecommunication Equipment Type (HL7 – 0202)

Table 35: Telecommunication Equipment Type (HL7 – 0202)

CODE	DESCRIPTION
CP	Cellular Phone
PH	Telephone

7.6 Name Type (HL7 – 0200)

Table 36: Name Type (HL7 – 0200)

CODE	DESCRIPTION
A	Alias Name
I	Documented (Licensing Name) Health Card Name
L	Legal Name
M	Maiden Name
N	Preferred/ Nickname /"Call me" Name/Street Name

7.7 Address Type (HL7 – 0190)

Table 37: Address Type (HL7 – 0190)

CODE	DESCRIPTION
C	Current Or Temporary
H	Home
M	Mailing

A	Vacation
V	Physical Visit

* Highlighted row is a non-HL7 code

7.8 Gender/ Administrative Sex (HL7 – 0001)

Table 38: Gender/ Administrative Sex (HL7 – 0001)

CODE	DESCRIPTION
F	Female
M	Male
UNK	Unknown
UN	Undifferentiated

8 Appendix C: Use Case to Requirement Traceability

Table 39: Use Case to Requirement Traceability Matrix

REQUIREMENT	USE CASE								Total
	UC-001	UC-002	UC-003	UC-004	UC-005	UC-006	UC-007	UC-008	
CR001			X		X	X			3
CR002			X		X	X			3
CR003		X	X	X					3
CR004		X	X	X					3
CR005		X	X	X	X	X			5
CR006	X								1
CR007		X		X					2
CR008		X		X					2
CR009		X		X					2
CR010		X							1
CR011		X		X	X	X			4
CR012		X		X					2
CR013		X						X	2
CR014						X			1
CR015					X		X		2
CR016					X		X		2
CR017						X	X		2
CR018					X		X		2
CR019								X	1
CR020					X		X		2
CR021		X		X	X	X	X	X	6
Baseline 01-002					X		X		2
Total	1	11	5	9	10	7	7	3	53

9 Appendix D: Release Notes

Version 1.0 September 6, 2018

- Initial release

Version 1.1 September 11, 2019

- Updated document theme to new organizational visual identity
- Updated Manitoba eHealth to Shared Health to align with new organizational structure, including changes to the EMR Certification contact email address
- Updated Glossary:
 - Removed elements “Hypertext Transfer Protocol Secure” and “Mutual Authentication”
 - Updated element “eHealth_hub” to align with Shared Health definition
- Updated Security Requirements:
 - Changed ID prefix from “HD.” to “SEC-“
- Updated Appendix A: Web Service:
 - Added clarification in section 6.1 Web Service Definition Language (WSDL) to provide clarification on accessing WSDL files

Version 1.2 March 31, 2020

- Updated Related Documents:
 - Added eHealth_hub – Authentication Specification
- Created a dependency to the eHealth_hub – Authentication Specification
 - The eHealth_hub – Authentication Specification contains the previous security requirements and appendices
 - Deleted previous security requirements and appendices
 - Renamed Security Requirements to Authentication Requirements