

ELECTRONIC MEDICAL RECORDS

EMR – OLIS Specification

Version 4.2

FINAL

Date: April 1, 2015

TABLE OF CONTENTS

TABLE OF CONTENTS	2
GLOSSARY	3
1. INTRODUCTION	5
1.1 Overview of the OLIS Services	5
1.2 Scope of EMR-OLIS Specification	6
1.3 Actors and Workflow Description	7
1.3.1 EMR - OLIS Business Use Case	8
1.3.2 Preload Query and Practitioner Query - Activity Diagram	9
1.3.3 Patient Query - Activity Diagram	10
2. SPECIFICATION TRACEABILITY	11
2.1 Highlights of changes	11
2.2 Related Documents and References	11
3. EMR-OLIS REQUIREMENTS	12
3.1 OLIS PreLoad Query	12
3.2 OLIS Practitioner Query	17
3.3 OLIS Patient Query	20
3.4 EMR Lab Management	25
3.5 Error Management	28
3.6 Audit / Certification / Other	29
4. REPORT IDENTIFICATION GUIDANCE	30
5. RETIRED REQUIREMENTS	31

GLOSSARY

TERM	MEANING
CPSO	College of Physicians and Surgeons of Ontario
CPSO Number	The 5 or 6 digit unique identifier number assigned by CPSO to physicians, allowing them to practice medicine in Ontario.
EMR	Electronic Medical Record
EMR Offering	A specific software version of an EMR product and the services and support for that particular product, all as more particularly described in the EMR Certification Agreement.
EMR specification	An EMR specification is one of several Ontario EMR Specifications that define functional and non-functional requirements for an EMR Offering in Ontario. Each specification in the Ontario EMR Specifications focuses on a particular component, functionality or interoperability and will be updated over time as new requirements and/or enhancements are introduced.
HCN	Health Card Number The lifetime identification number assigned to all eligible residents within a jurisdiction (province) for the purpose of receiving provincially funded insured health services.
HCP	Health Care Provider Any provider, group, licensed laboratory, private physiotherapy facility or independent health facility that is registered with the MOHLTC to bill for rendering insured services.
HIC	Health Information Custodian
HIS	Hospital Information System
Lab Request/Order	A valid request to perform one or more tests / observations on one or more specimens. A 'Lab Request/Order' is initiated by a provider using the EMR or by manually filling in a laboratory requisition form.
M	Mandatory requirement. An EMR Offering must have this function or provide this service.
MOHLTC	Ministry of Health and Long-Term Care
MRP	Most Responsible Physician The attending physician who is primarily responsible for the day-to-day care of patient. In absence, the covering healthcare provider will fulfill the MRP role.
Non-Nominal Patients	Used in the context of the 'PreLoad Query' and 'OLIS Practitioner Query' and refers to the fact that patient demographic data (FN/LN, HCN, DOB, Gender) are not required parameters.
OHCN	Ontario Health Card Number The lifetime identification number assigned to all eligible residents in Ontario for the purpose of receiving provincially funded insured health services.
OHIP	Ontario Health Insurance Plan
OLIS	Ontario Laboratories Information System
OLIS Lab Report	The unit of information returned by OLIS in a query response identified by the ORC-OBR-ZBR-OBX-ZBX sequence

TERM	MEANING
OLIS Lab Report Message	The HL7 message returned by OLIS in response to the 'OLIS Patient Query (Z01)' and 'OLIS Practitioner Query (Z04)' query messages. Each lab report message retrieved from OLIS may contain one or more lab reports.
OLIS Test Request	An OLIS Test Request is an individual orderable item in the OLIS Test Request Nomenclature in OBR segment Each individual test request within a Lab Request/Order maps to one or more test requests in the OLIS Test Request Nomenclature. Multiple OLIS test requests grouped under ORC segment indicates they belong to the same Lab Request/Order. An OLIS Test Request can have one or many test results(OBX)
OLIS Test Result	The numeric or quantitative outcome of a test request that is uniquely identified in the OLIS Test Result Nomenclature (OBR.3 – Observation Identifier)
OntarioMD	OntarioMD Inc.
Ontario EMR Requirements Repository	The collection of functional requirements and discrete data elements published by OntarioMD; includes new, existing and retired requirements.
Provider	A person who provides healthcare services to patients.
Query Initiating User	The user that initiates a query on his/her own behalf (the initiator and the receiver is a practitioner) or a user that initiates a query on behalf of a practitioner.
Requesting HIC	The provider using the EMR that is identified as a report recipient (ZRP.1) If a query is initiated by the practitioner on their own behalf, the individual is identified in both the Requesting HIC query parameter (ZRP.1) and in the ZSH (ZSH.1 and ZSH.2) segments. If a query is initiated by an automated process on behalf of the requesting practitioner, then Requesting HIC is identified in both the Requesting HIC query parameter (ZRP.1) and in the ZSH (ZSH.1 and ZSH.2) segment. If the query is initiated by a person (non-provider) acting on behalf of the requesting practitioner (@ZRP.1 Requesting HIC parameter), then the requesting practitioner will be identified in the @ZRP.1 parameter and the person acting on their behalf will be identified the ZSH (ZSH.1 and ZSH.2) segment.
W	Weighted requirement. The EMR Offering will receive a point value if the requirement is met.

1. INTRODUCTION

1.1 OVERVIEW OF THE OLIS SERVICES

The Ontario Laboratory Information System is a single provincial system that allows all laboratory information on residents in Ontario to be exchanged electronically between practitioners and laboratory service providers, and to provide the Ministry of Health and Long-Term Care (MOHLTC) with program management information.

OLIS is being designed to high availability, reliability, and performance specifications. Therefore, all stakeholders can rely on its high availability to satisfy their needs for information exchange and access.

OLIS will interface with Laboratory Information Systems, Specimen Collection Centre Systems, Hospital Information Systems, and Electronic Medical Record Systems. This document often refers to these systems collectively as external systems. A web-based portlet application will also be provided for users who do not have access to an OLIS-connected external system.

OLIS will provide the following services to external clinical applications:

1. Capture of laboratory orders, including specimen information
2. Capture of test results
3. Various queries to access laboratory information by patient, practitioner, and health care facility
4. Lab-to-lab exchange of orders and results to support referrals

OLIS captures, transmits, stores, and maintains information on laboratory tests. This supports clinical decision-making capability by providing health practitioners with comprehensive and timely results, facilitating ordering, and by offering best practice guidelines, and code tables.

OLIS interfaces with Laboratory Information Systems (LIS) using an HL7 interface. This allows laboratories to retrieve orders and provide results data online. This also facilitates the verification of patient data, and medical necessity of tests.

OLIS interfaces with Electronic Medical Record Systems (EMR) using an HL7 interface. This allows the physicians the ability to view results online.

1.2 SCOPE OF EMR-OLIS SPECIFICATION

This specification is one of several Ontario EMR Specifications that define functional and non-functional requirements for an EMR Offering in Ontario. Each specification focuses on a particular component, functionality or interoperability and will be updated over time as new requirements and/or enhancements are introduced.

This specification defines requirements of the EMR Offering to interface with the Ontario Laboratory Information System (OLIS). These requirements complement existing Laboratory Management Requirements identified in Core EMR Specification - Section 1: Baseline Requirements.

The EMR Offering will interface with OLIS using HL7 messages. Through interfacing with OLIS EMR systems will be able to:

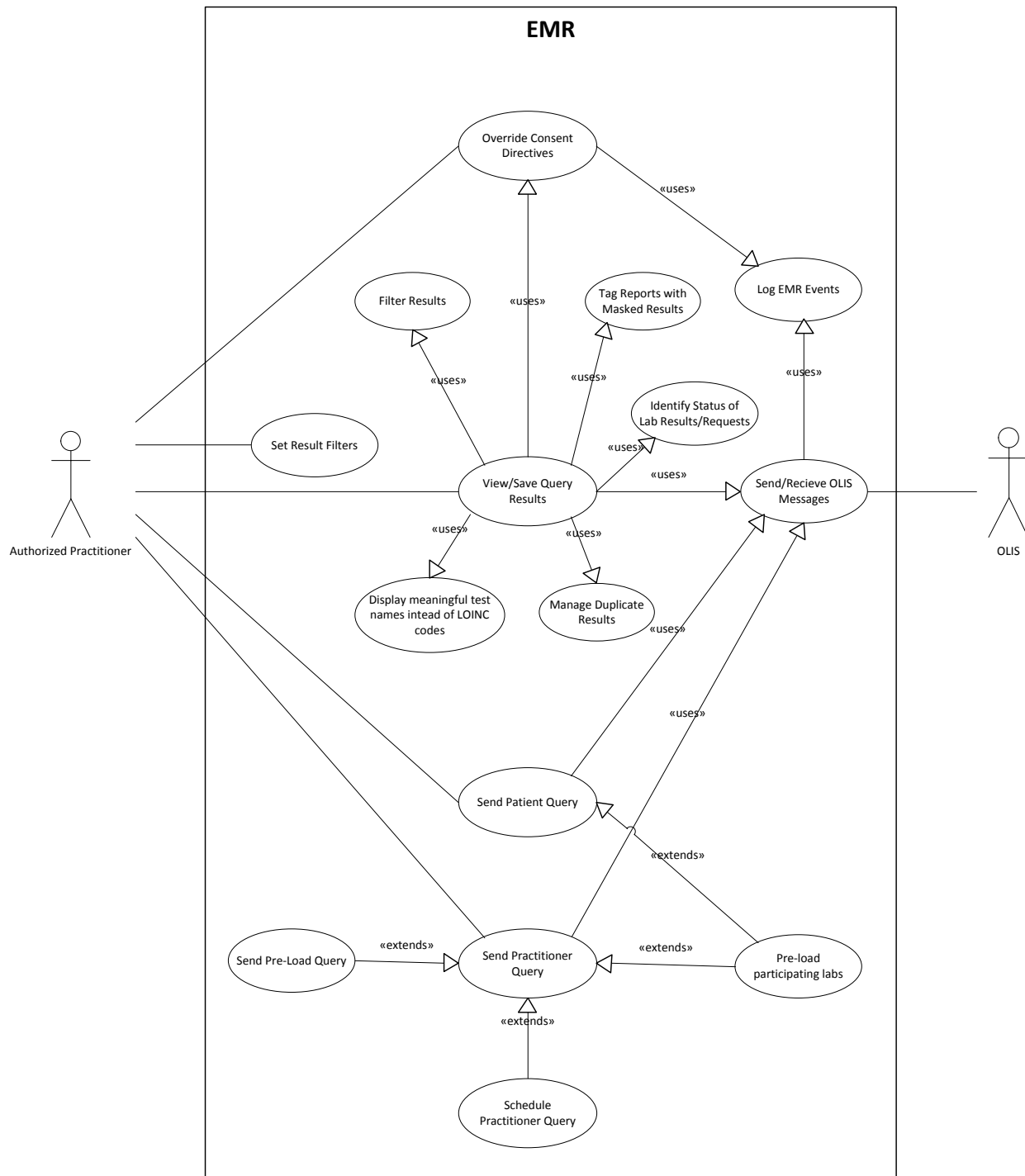
- a) Retrieve laboratory results reports in a consistent format.
- b) Retrieve laboratory results reports:
 - by practitioner
 - by patient or
 - initial pre-load
- c) Preview and/or selectively process lab results reports before saving and managing them in the EMR.
- d) Override a consent directive to retrieve blocked reports once patient consent is received.
- e) Manage duplicate lab results and/or lab reports

1.3 ACTORS AND WORKFLOW DESCRIPTION

The diagrams that appear on the following pages illustrate:

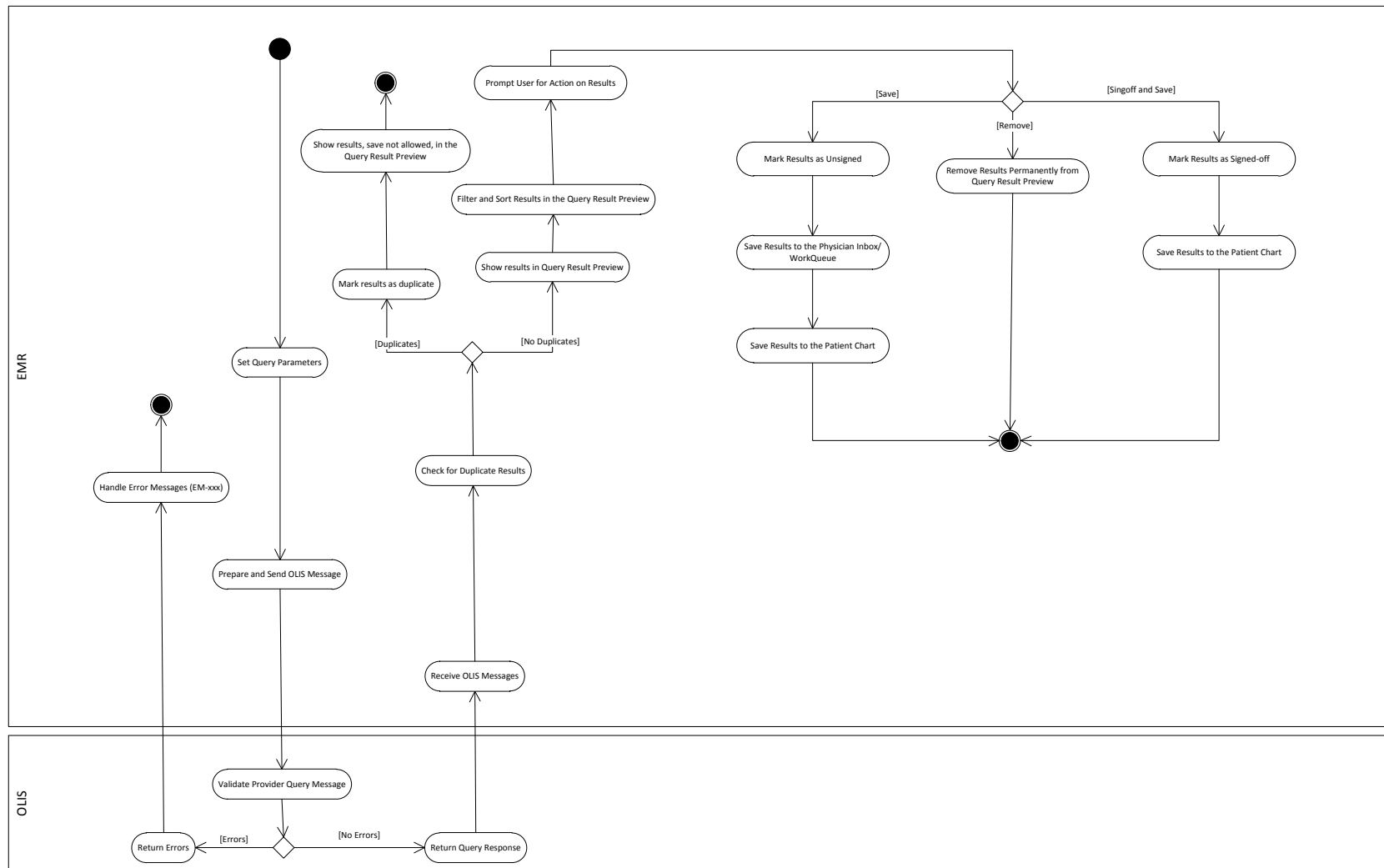
- How the EMR users interact with the EMR Offering, poll OLIS to retrieve status updates and new test results for orders placed by the practitioner via the Lab Requisition Order (paper based)
- How the lab test results are processed by the EMR Offering based on query type (Preload Query, Practitioner Query, Patient Query)
- Who are the actors
 - Ordering Practitioner: provider that completes paper requisition (EMR Offering system) or that order lab test for a patient
 - EMR Offering
 - OLIS
 - Commercial Labs: LifeLabs, Gamma Dynacare, CML
 - HIS (Hospital Information System)
 - Query Initiator: the EMR user that is querying OLIS for lab test results
 - Report Recipient: the EMR provider receiving OLIS lab test reports/results

1.3.1 EMR - OLIS BUSINESS USE CASE



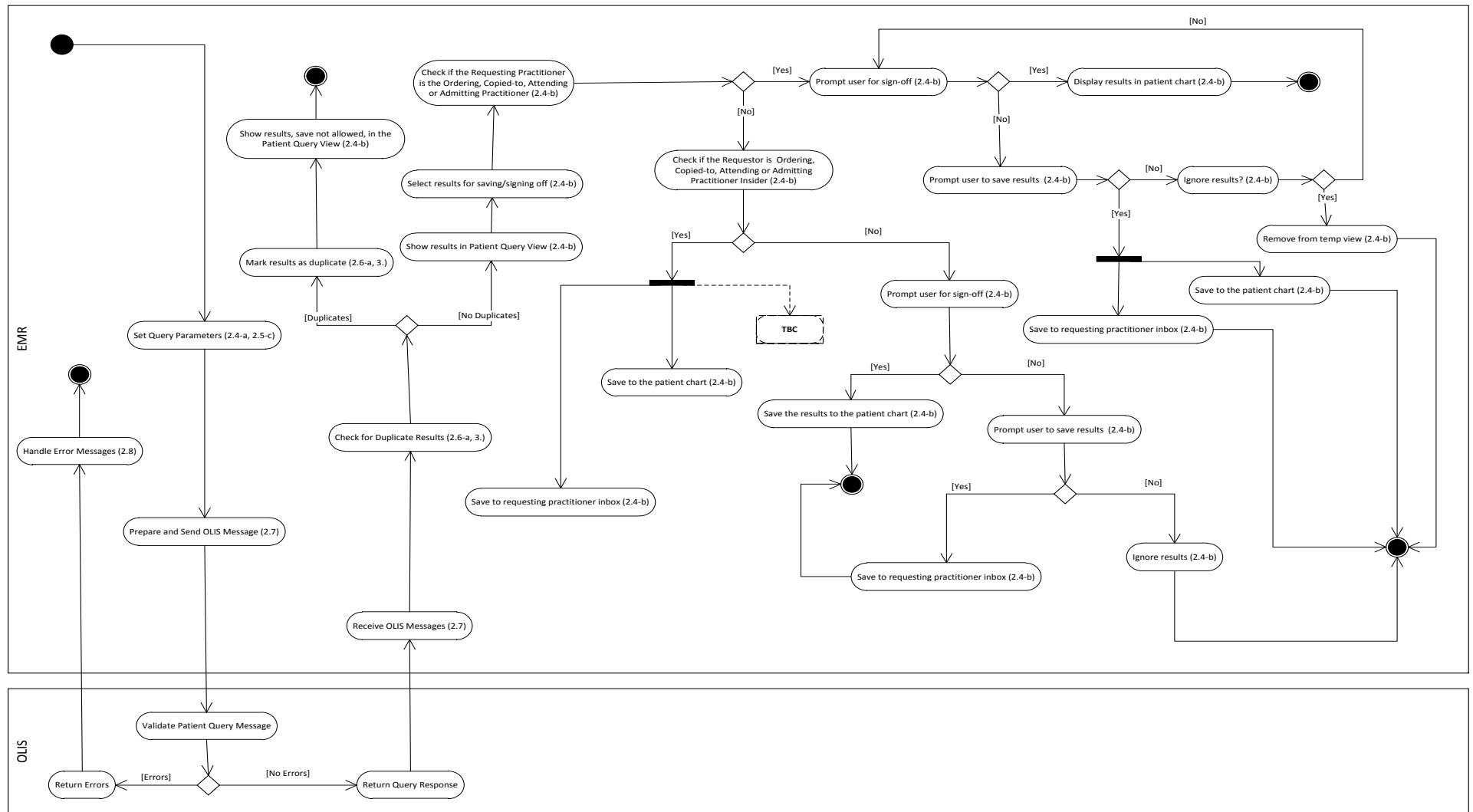
DIAGRAM_1: EMR-OLIS BUSINESS USE CASE

1.3.2 PRELOAD QUERY AND PRACTITIONER QUERY - ACTIVITY DIAGRAM



DIAGRAM_2: PRELOAD QUERY (PLQ) AND PRACTITIONER QUERY (PRQ)

1.3.3 PATIENT QUERY - ACTIVITY DIAGRAM



DIAGRAM_3: PATIENT QUERY (PTQ)

2. SPECIFICATION TRACEABILITY

2.1 HIGHLIGHTS OF CHANGES

Ontario EMR Specification v4.1 – Appendix E was used as a basis to create this EMR-OLIS Specification.

TYPE	# of Requirements v 4.1	# of Requirements v 4.2
New Requirements	19	3
Previous Requirements	0	27
Updated Requirements	0	2
Total Number of Requirements	19	32

* **NOTE:** Due to splitting and/or merging requirements defined in the previous specification, the “Total Number of Requirements” in the most current version is not to be calculated based on the “Total Number of Requirements” in the previous specification version.

2.2 RELATED DOCUMENTS AND REFERENCES

The following table lists all documents related to, or referenced in EMR-OLIS Specification.

DOCUMENT NAME	VERSION	DATE	PUBLISHING ORGANIZATION	LINK
CORE EMR Specification Section 1: EMR Baseline Requirements	v4.2	1-April-2015	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
Ontario Laboratory Information System (OLIS) Interface Specification	R01.23	31-Oct-2014	OLIS-eHealth	https://www.ehealthontario.ca/portal/server.pt/community/olis_reference_information_and_adoption_toolkit/2504
Ontario Laboratory Information System (OLIS) Nomenclature Specification	v1.27	N/A	OLIS-eHealth	https://www.ehealthontario.ca/portal/server.pt/community/olis_reference_information_and_adoption_toolkit/2504
OLIS – Report Identification Guidance	v1.0	15-Nov-2012	OLIS-eHealth	https://www.ehealthontario.ca/portal/server.pt/community/olis-emr_information/2505
A Guide to the OLIS Nomenclature	v2.0	24-Sep-2010	OLIS-eHealth	https://www.ehealthontario.ca/portal/server.pt/community/olis_reference_information_and_adoption_toolkit/2504
OLIS Nomenclature	N/A	N/A	OLIS-eHealth	https://www.ehealthontario.ca/portal/server.pt/community/olis-emr_information/2505

OntarioMD will periodically review and update the above list. It is essential that implementers keep current regarding any changes to these specifications.

3. EMR-OLIS REQUIREMENTS

This section consists of the EMR functional requirements for EMR-OLIS Specification.

Scoring Key: **M** = Mandatory criteria
W = Weighted criteria

Status Key: **N** = New requirement for this EMR Specification
P = Previous requirement from EMR-Specification 4.1
U = Updated from a previous EMR Specification 4.1
R = Retired from previous EMR Specification 4.1

OMD #: unique identifier that identifies each requirement within *Ontario EMR Requirements Repository*

YEAR Key: the year the requirement became part of the *Ontario EMR Requirements Repository*

3.1 OLIS PRELOAD QUERY

Purpose:

The "OLIS Preload Query" allows external systems, such as EMRs, acting on behalf of a laboratory information client (Requesting HIC) to request laboratory information (lab test results) from the OLIS Clinical Repository for non-nominal patients, over a pre-defined time span on an on-demand basis.

This query can be used to upload OLIS laboratory information in the EMR Offering:

- for practitioners that move from paper-based medical records to an EMR Offering
- for practitioners that move from one EMR Offering to another EMR Offering
- etc.

Query Characteristics:

The "OLIS Preload Query" is based on the "OLIS Practitioner Query" (Z04) message structure.

Query parameters are specified in the Input Parameter List (SPR.4) of the SPR segment (refer to OLIS Spec).

Requesting HIC and Start Timestamp & End Timestamp are mandatory parameters.

Requesting HIC parameter applies to @ZRP.1 in the Input Parameter List (SPR.4).

The Start Timestamp & End Timestamp parameter applies to "Results Rpt/Status Chng – Date/Time" (@OBR.22) in the Input Parameter List (SPR.4).

The person who initiates the query is asserted in the ZSH segment.

Response Characteristics:

This query returns all orders/reports from the OLIS Clinical Repository that have *Results Rpt/Status Chng - Date/Time Timestamp (OBR.22)* within the specified timeframe and the *Requesting HIC (ZRP.1)* identified as one of the:

- Ordering Practitioner (OBR.16)
- Copied-to Practitioner (OBR.28)
- Attending Practitioner (PV1.7)
- Admitting Practitioner (PV1.17)

"OLIS Preload Query" versus "OLIS Practitioner Query"**Similarities:**

- both queries are based on the Z04 query structure
- both queries require same mandatory parameters: @OBR.22 and @ZRP.1
- both queries accept same optional parameters: QRD.7 , @OBR4 and @OBX.3
- both queries return lab reports from the OLIS Clinical Repository where the *Requesting HIC (OBR.15)* is identified as one of the Ordering Practitioner (OBR.16) / Copied-to Practitioner (OBR.28) / Attending Practitioner (PV1.7) / Admitting Practitioner (PV1.17)

Differences:

- "OLIS Preload Query" runs on-demand while 'OLIS Practitioner Query' runs on a periodic basis (eg every 30 min)
- "OLIS Practitioner Query" is used to upload new and/or updated OLIS laboratory information into the EMR Offering while "OLIS PreLoad Query" is used to upload historic OLIS laboratory information into the EMR Offering
- The Start Timestamp & End Timestamp parameter applies to "Results Rpt/Status Chng – Date/Time" (@OBR.22) in the Input Parameter List (SPR.4)
- Use of the End Timestamp parameter that applies to "Results Rpt/Status Chng – Date/Time" (@OBR.22) in the Input Parameter List (SPR.4) is not recommended for the "OLIS Practitioner Query" since this might result in less lab test results to be returned by the query. The End Timestamp parameter is recommended to be used for the 'OLIS PreLoad Query'

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
OLIS01.01	<p>The EMR Offering must support <u>creation and transmission</u> of the "OLIS PreLoad Query" on an "on-demand basis".</p> <p><i>Refer to the OLIS Interface Specification</i></p>	<p>The "OLIS PreLoad Query" must be presented and structured so that it can be executed by the practitioner.</p> <p>"Requesting HIC" and "Query Initiating User" credentials must automatically fill in the appropriate parameters in the "OLIS PreLoad Query".</p> <p>The EMR Offering must provide the ability to set the "Start Timestamp" and "End Timestamp" (@OBR.22). Setting-up these parameters must not affect the "Start Timestamp" parameter for the "OLIS Practitioner Query".</p>	M	U
OLIS01.02	<p>The EMR Offering must allow the user <u>to preview</u> the laboratory information returned by the "OLIS PreLoad Query", prior to permanently saving the laboratory information into the patient chart and/or in the "Requesting HIC" (physician) inbox / work queue.</p>	<p>The laboratory information returned by the "OLIS PreLoad Query" and displayed in the "PreLoad Preview" is provider specific and must be accessible only by the "Requesting HIC".</p> <p>At a minimum the "PreLoad Preview" must include:</p> <ul style="list-style-type: none"> - Patient FN/LN, DOB, Gender, HCN - Collection Date/Time (OBR.7) - Category: Chemistry, Hematology, Immunology, Microbiology, etc. - Test Request Name (OBR.4) / Test Request Status (OBR.25) - Test Result Information: Test Result Name (OBX.3) / Test Result Value (OBX.5) / Units (OBX.6) / Abnormal Flag (OBX.8) / Test Results Status (OBX.11) - Practitioner: Ordering (OBR.16) , CCed (OBR.28), Admitting (PV1.17), Attending (PV1.7) - Lab Name - whether the patient is matched or unmatched in the EMR <p>Hovering over the above data elements to get the information will not meet the requirement.</p> <p>Abnormal Flag (OBX.8) must be displayed without opening the actual lab report/result.</p>	M	U

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
OLIS01.03	The EMR Offering must provide the <u>capability to filter and sort</u> the laboratory information displayed in the "PreLoad Preview".	<p>At a minimum, the EMR Offering must provide the capability to:</p> <ul style="list-style-type: none"> - filter (apply query selection) on the preview fields as per requirement (req#PLQ-002 - mentioned above) - sort by all the preview fields <p>The EMR Offering must be able to limit filter options based on the information laboratory information returned by the "OLIS Preload Query":</p> <ul style="list-style-type: none"> - patient: First Name, Last Name, HCN - Lab Name - Category: Chemistry, Hematology, Immunology, Microbiology, etc - Test Request Status (OBR.25) - Test Result Status (OBX.11) - Practitioner: Ordering (OBR.16) , CCed (OBR.28), Admitting (PV1.17), Attending (PV1.7) - Abnormal Flag (OBX.8) - Reporting Laboratory (ZBR.4) / - Exclude Reporting Laboratory (ZBE.4) - Performing Laboratory (ZBR.6) / - Exclude Performing Laboratory (ZBE.6) - Test Request Code (OBR.4) / - Test Request Status (OBR.25) <p>Filtering on an individual Lab Name must return/display all laboratory results where the "Lab License Number" (e.g. 5623, 5629, 5639) is identified as belonging to the parent lab (e.g. Lifelab).</p>	M	U
OLIS01.04	The EMR Offering must allow the user <u>to act upon</u> the laboratory information returned by the "OLIS Preload Query", prior to permanently saving the laboratory information into the patient chart.	<p>The EMR Offering must provide a mechanism to select laboratory information for the purpose of: "save", "sign-off & save" and "remove".</p> <p>At a minimum, the EMR user must be able to select:</p> <ul style="list-style-type: none"> - individual test requests - individual test results - all test results and test requests <p>The laboratory information presented in the "PreLoad Preview" must be persisted in the EMR Offering until one of the following action is taken:</p> <ul style="list-style-type: none"> - permanently "save" the laboratory information into the EMR Offering - permanently "sign off & save" the lab information in the EMR Offering - permanently "remove" the lab information from EMR Offering and provide reason for removal <p>The following rules must apply once the laboratory information is <u>permanently saved</u> in the EMR Offering:</p> <ul style="list-style-type: none"> - save : displays laboratory information in the Requesting HIC (physician) inbox /work queue and patient chart; the laboratory information is marked as "un-signed" or "not reviewed" - sign-off & save: displays laboratory information only in the patient chart; the laboratory information is marked as "signed-off" or "reviewed". <p>Once "saved" or "signed-off & saved", the lab report/result must be added to the patient chart and the "Requesting HIC" inbox / work queue.</p>	M	U

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
OLIS01.05	<p>The EMR Offering must be able to manage duplicate lab reports/results returned by the "OLIS PreLoad Query".</p> <p><i>Refer to "OLIS - Report Identification Guidance" in this document.</i></p>	<p>Possible solutions include but not limited to:</p> <ul style="list-style-type: none">- automatically reject duplicate lab reports/results- identify and allow manual removal of duplicate lab reports/Results from the "PreLoad Preview" <p>In case where duplicate reports/results are displayed in the "PreLoad Preview", the EMR Offering must provide an ability to sort and filter the duplicate lab reports/results.</p>	M	U

3.2 OLIS PRACTITIONER QUERY

Purpose:

The “OLIS Practitioner Query” allows external systems, such as EMRs acting on behalf of a laboratory information client (Requesting HIC) to request laboratory information (lab test results) from the OLIS Clinical Repository that has been created or updated in a specified timeframe, for non-nominal patients.

This query can be used to upload new and/or updated OLIS laboratory information into the EMR Offering on a periodic basis.

Query Characteristics:

Query parameters are specified in the SPR.4 *Input Parameter List* of the SPR segment (refer to OLIS Interface Specification > HL7 Message Specification > Message Structure > Message Segments > SPR Segment).

The Start Timestamp and Requesting HIC parameters are mandatory. The End Timestamp is an optional parameter, but it is typically not provided so that the most up-to-date information will be returned in the query response (excerpt from OLIS Interface Specification).

The Start Timestamp and End Timestamp parameters applies to *"Results Rpt/Status Chng – Date/Time"* (@OBR.22) in the Input Parameter List (SPR.4).

Requesting HIC parameter applies to @ZRP.1 in the Input Parameter List (SPR.4).

The person who initiates the query is asserted in the ZSH segment.

Response Characteristics:

This query returns all orders/reports from the OLIS Clinical Repository that have *Results Rpt/Status Chng - Date/Time Timestamp* (OBR.22) within the specified timeframe and the *Requesting HIC* (ZRP.1) is identified as one of the:

- Ordering Practitioner (OBR.16)
- Copied-to Practitioner (OBR.28)
- Attending Practitioner (PV1.7)
- Admitting Practitioner (PV1.17).

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
OLIS02.01	The lab reports/results returned by the "OLIS Provider Query" must be available in the "Requesting HIC" (physician) inbox / work queue and in the patient chart.	<p>The EMR Offering must have a default polling interval. At a minimum, the default polling interval must be set-up at the clinic level.</p> <p>The EMR users must be able to:</p> <ul style="list-style-type: none"> - set-up their desired polling interval - set-up and update the Start Timestamp parameter for each individual practitioner query <p>The default polling interval must apply to all "OLIS Practitioner Queries" regardless the automated queries fail to execute or are run manually.</p> <p>The EMR Offering must automatically adjust the "Start Timestamp" parameter to the latest OBR.22 timestamp for which lab reports/results were received for each individual "OLIS Practitioner Query" configured in the system.</p>	M	U
OLIS02.02	The EMR Offering must provide a <i>mechanism to configure</i> where to display the <u>unmatched to the patient lab reports/results</u> .	<p>The automated match of the lab reports/results to the patient's chart must be based on patient's demographics (refer to req# OLIS04.10).</p> <p>The automated match of the lab reports/results to the "Requesting HIC" (physician) inbox / work queue must be based on the CPSO number of the "Requesting HIC".</p> <p>The patient name must be identified for each lab report/result in the "Requesting HIC" inbox / work queue. Hovering over a lab report/result to identify the name of the patient will not meet the requirement.</p> <p>The EMR Offering must support filtering /sorting the lab reports/results by patient name in the practitioner inbox/work queue.</p> <p>A lab report/result must be added only once to the patient chart and only show up once in the Requesting HIC inbox / work queue.</p>	M	U
OLIS02.03	The EMR Offering must provide a <i>mechanism to configure</i> where to display the <u>unmatched to the patient lab reports/results</u> .	<p>At a minimum, the user must be able to configure whether the <u>unmatched to the patient lab reports/results</u> should be displayed:</p> <ul style="list-style-type: none"> - in the "Requesting HIC" inbox / work queue OR - a place in the EMR Offering where unmatched OLIS lab reports/results can be managed <p>At a minimum the EMR Offering must allow for configuration at the practitioner/provider level.</p> <p>Lab reports/results for patients that do not pre-exist in EMR cannot be displayed in "a patient chart".</p> <p>Automatically creating "EMR patient charts" for patients with lab reports /results received via OLIS that do not pre-exist in EMR will not meet the requirement.</p>	M	U

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
OLIS02.04	The EMR Offering must allow the user to manually submit the practitioner query.	<p>This query can be submitted for:</p> <ul style="list-style-type: none">- a single "Requesting HIC"- a group of "Requesting HICs"- all "Requesting HICs" <p>Manually running the 'OLIS Practitioner Query' must not affect the default interval set-up at the clinic level.</p> <p>The subsequent automated "OLIS Practitioner Query" will adapt to ensure no gap in laboratory results reporting occurs.</p> <p>The EMR user that manually runs the "OLIS Practitioner Query" must be properly identified in the ZSH (ZSH.1 and ZSH.2) segment.</p>	M	U

3.3 OLIS PATIENT QUERY

Purpose:

The “OLIS Patient Query” allows external systems (EMR Offerings) acting on behalf of a laboratory information customer (Requesting HIC) to request laboratory information (lab test results) from the OLIS Clinical Repository for an individual patient and timeframe. The external system may optionally request that the result set be limited according to a variety of constraints (ie. Ordering Practitioner)

This query can be used to upload OLIS laboratory information into the EMR Offering on an “on-demand basis”.

Query Characteristics:

Query parameters are specified in the *Input Parameter List (SPR.4)* of the SPR segment (refer to OLIS Spec)

Patient ID (HCN), Requesting HIC and Start Timestamp & End Timestamp are mandatory parameters.

Requesting HIC parameter applies to (@ZRP.1) parameter in the *Input Parameter List (SPR.4)* and is not a filter criterion.

The Start Timestamp & End Timestamp parameter applies to “*Results Rpt/Status Chng – Date/Time*” (OBR.22) **or** “*Observation Date/Time*” (OBR.7) in the *Input Parameter List (SPR.4)*.

Patient ID (HCN) applies to @PID.3 parameter in the *Input Parameter List (SPR.4)*.

The person who initiates the query is asserted in the ZSH segment.

Response Characteristics:

This query returns all orders/reports that meet the query criteria and that have a “*Results Rpt/Status Chng - Date/Time Timestamp*” (OBR.22) within the specified timeframe **or** an “*Observation Date/Time*” (OBR.7) within the specified timeframe.

This query returns full orders/reports (i.e., all test requests and test results for the order) unless the query originates from an SCC or a test-request-level block exists.

For those test requests that have test results, only current test results are returned; a prior test result is not returned if it has been subsequently amended by a later test result.

OMD #	REQUIREMENT	GUIDELINESs	M/W	Status
OLIS03.01	<p>The EMR Offering must support the creation and manual transmission of the "OLIS Patient Query" on an "on-demand basis" for each practitioner.</p> <p><i>Refer to the OLIS Interface Specification:</i> - Section: Use Case Model > Queries > Use Cases > Retrieve Order/Report for Patient</p>	<p>At a minimum, the "OLIS Patient Query" must be presented and structured so it can be executed by the "Requesting HIC" (practitioner) from the patient chart. Requiring user to login on a different system/application and run the "OLIS Patient Query" will not meet the requirement.</p> <p>The "'Requesting HIC" credentials and patient identifier(s) must automatically fill in the "OLIS Patient Query".</p> <p>The EMR Offering must provide the ability to set the Start Timestamp and End Timestamp (@OBR.22 or @OBR.7). Setting-up these parameters must not affect the Start Timestamp parameter for the "OLIS Practitioner Query".</p> <p>The EMR Offering must allow the user to specify the following parameters to narrow the results reports returned by OLIS:</p> <ul style="list-style-type: none"> - Ordering Practitioner (@OBR.16) - Copied-to Practitioner (@OBR.28) - Attending Practitioner (@PV1.7) - Admitting Practitioner (@PV1.17) - Reporting Laboratory (@ZBR.4) / - Exclude Reporting Laboratory (@ZBE.4) - Performing Laboratory (@ZBR.6) / - Exclude Performing Laboratory (@ZBE.6) - Test Request Code (@OBR.4) / - Test Request Status (@OBR.25) <p>The remaining parameters described in the OLIS Interface specification for "OLIS Patient Query" (Z01) can also be implemented:</p> <ul style="list-style-type: none"> - Test Result Code (@OBX.3) - Specimen Collector (@ZBR.3) - Destination Laboratory (@ZBR.8) - Test Request Placer (@ZBR.2) - Placer Group Number (@ORC.4) <p>The EMR Offering must allow users to type in the parameters and/or select from pre-loaded parameters lists (refer to OLIS Interface spec and OLIS Nomenclature).</p>	M	U

OMD #	REQUIREMENT	GUIDELINESs	M/W	Status
OLIS03.02	The EMR Offering must allow the user <u>to preview</u> the laboratory information returned by the "OLIS Patient Query", prior to permanently saving the laboratory information into the patient chart and in the "Requesting HIC" (physician) inbox / work queue.	<p>The laboratory information returned by the "OLIS Patient Query" and displayed in the "Patient Query Preview" is provider specific and must be accessible only by "Requesting HIC".</p> <p>At a minimum the "Patient Query Preview" must include:</p> <ul style="list-style-type: none"> - Collection Date/Time (OBR.7) - Chemistry, Hematology, Immunology, Microbiology, etc - Test Request Name (OBR.4) / Test Request Status (OBR.25) - Test Result Information: Test Result Name (OBX.3) / Test Result Value (OBX.5) / Units (OBX.6) / Abnormal Flag (OBX.8) /Test Results Status (OBX.11) - Practitioner: Ordering (OBR.16) , CCed (OBR.28), Admitting (PV1.17), Attending (PV1.7) - Lab Name - whether the patient is matched or un-matched patient in the EMR <p>Hovering over the above data elements to get the information will not meet the requirement.</p> <p>Abnormal Flag (OBX.8) must be displayed without opening the actual lab report/result.</p> <p>The "Patient Query Preview" is provider specific; must display just lab reports/results for the "Requesting HIC".</p>	M	U
OLIS03.03	The EMR Offering must provide the ability <u>to filter and sort</u> the laboratory information displayed in the "Patient Query Preview".	<p>At a minimum, the EMR Offering must provide the ability to:</p> <ul style="list-style-type: none"> - filter (apply query selection) on the preview fields as per requirement (req#OLIS03.02 mentioned above) - sort by all the preview fields <p>The EMR Offering must be able to automatically populate following filters based on laboratory information returned by the "OLIS Patient Query":</p> <ul style="list-style-type: none"> - Lab Name - Category: Chemistry, Hematology, Immunology, Microbiology, etc - Test Request Status (OBR.25) - Test Report Status (OBX.11) - Abnormal Flag (OBX.8) - Practitioner: Ordering (OBR.16) , CCed (OBR.28), Admitting (PV1.17), Attending (PV1.7) - Reporting Laboratory (ZBR.4) / - Exclude Reporting Laboratory (ZBE.4) - Performing Laboratory (ZBR.6) / - Exclude Performing Laboratory (ZBE.6) <p>Filtering on an individual LabName must return/display all laboratory results where the "Lab License Number" (ie 5623, 5629, 5639) is identified as belonging to the specified laboratory (Lifelab).</p>	M	U

OMD #	REQUIREMENT	GUIDELINESs	M/W	Status
OLIS03.04	The EMR Offering must allow the user <u>to act upon</u> the laboratory information returned by the "OLIS Patient Query", prior to permanently saving the laboratory information into the patient chart	<p>The EMR Offering must provide a mechanism to select laboratory information for the purpose of : "save", "sign-off & save" and "remove": At a minimum, the EMR user must be able to select:</p> <ul style="list-style-type: none"> - individual test results - individual test requests - all test results and test requests <p>The laboratory information presented in the "Patient Query Preview" must be persisted in the EMR Offering until one of the following action is taken</p> <ul style="list-style-type: none"> - permanently "save" the laboratory information into the EMR Offering - permanently "sign off-& save" the lab information in the EMR Offering - permanently "remove" the lab information from "Patient Query Preview" <p>Following rules must apply once the laboratory information is permanently saved in the EMR Offering:</p> <ul style="list-style-type: none"> - save : will display laboratory information in the Requesting HIC (physician) inbox /work queue and patient chart; the laboratory information is marked as "not-signed" or "not reviewed" - sign-off & save: will display laboratory information only in the patient chart; the laboratory information is marked as "signed-off" <p>Once "saved" or "signed-off & saved", the lab report/result must be addedto the patient chart and the "Requesting HIC" inbox / work queue.</p>	M	U
OLIS03.05	<p>The EMR Offering must be able to manage duplicate lab reports/results returned by the "OLIS Patient Query".</p> <p><i>Refer to "OLIS - Report Identification Guidance" in this document.</i></p>	<p>Possible solution include but not limited to:</p> <ul style="list-style-type: none"> - automatically reject duplicate lab reports/results - allow manual removal of duplicate lab reports/Results from the "Patient Query Preview" <p>In case where duplicate reports/results are displayed in the "Patient Query Preview", the EMR Offering must provide an ability to sort and filter the duplicate lab reports/results.</p>	M	U

OMD #	REQUIREMENT	GUIDELINESs	M/W	Status
OLIS03.06	<p>The EMR Offering must provide the ability <u>to override a patient consent directive in OLIS</u> to see all blocked results reports for that patient.</p> <p><i>Refer to the OLIS Interface Specification:</i></p> <ul style="list-style-type: none"> - Section: Privacy Considerations > Overriding Consent 	<p>Upon receiving the "patient-level block message" or the "record-level block message", the EMR Offering must:</p> <ul style="list-style-type: none"> - visually indicate that some results within reports have been blocked because the patient has withdrawn their consent - allow the user the option to: <ul style="list-style-type: none"> > override the patient consent or > accept the results as presented - allow the user to indicate whether the consent was obtained from: <ul style="list-style-type: none"> > the patient or > the patient's substitute decision maker <p>The EMR Offering must log the above events, including:</p> <ul style="list-style-type: none"> - when the event occurred, - the identity of the persons who initiated the events - the practitioner on whose behalf the event occurred (Requesting HIC) - whether it was the patient or the substitute decision maker who authorized the override - EMR transaction id: unique EMR event id - OLIS transaction id: the unique ID identifying each HL7 message 	M	U

3.4 EMR LAB MANAGEMENT

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
OLIS04.01	<p>The EMR Offering must provide the ability to indicate the status of a lab test request.</p> <p><i>Refer to the OLIS Interface Specification</i> - Section: Laboratory Information Lifecycle and Entity Model > Entity Model > Orders/Reports</p>	<p>The EMR Offering must indicate whether the lab test request status is:</p> <ul style="list-style-type: none"> • F - Final • A - Some, but not all, results available • P - Preliminary • C - Correction to results <p>At a minimum, the lab test request status must be available in:</p> <ul style="list-style-type: none"> - patient chart - provider work queue / inbox - Patient Query – “Preview” - Preload Query – “Preview” <p>Hovering over to get the information will not meet the requirement.</p>	M	U
OLIS04.02	<p>The EMR Offering must provide the ability to indicate the status of lab test results.</p> <p><i>Refer to OLIS Interface Specification</i> - Section: Laboratory Information Lifecycle and Entity Model > Entity Model > Orders/Reports</p>	<p>The EMR Offering must indicate whether the lab test result status is:</p> <ul style="list-style-type: none"> • F- Final • P -Preliminary • C - Correction to results <p>At a minimum, the lab test request status must be available in:</p> <ul style="list-style-type: none"> - patient chart - provider work queue / inbox - Patient Query – “Preview” - Preload Query – “Preview” <p>Hovering over to get the information will not meet the requirement.</p>	M	U
OLIS04.03	<p>The EMR Offering must provide a list of participating laboratories.</p> <p><i>Refer to OLIS documentation:</i> - Lab and SCC Extract, and - Hospital Extract</p>	<p>The 'list of participating laboratories' applies to the following query parameters in the "OLIS Patient Query" :</p> <ul style="list-style-type: none"> - Reporting Laboratory (@ZBR.4) - Exclude Reporting Laboratory (@ZBE.4) - Performing Laboratory (@ZBR.6) - Exclude Performing Laboratory (@ZBE.6) 	M	U

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
OLIS04.04	<p>The EMR Offering must be <u>able to manage</u> duplicate lab test reports / results.</p> <p><i>Refer to: "OLIS – Report Identification Guidance" included in the current specification</i></p>	<p>The EMR Offering must be able to manage duplicate lab reports/results in:</p> <ul style="list-style-type: none"> - Preload Query Preview - Patient Query Preview - "Requesting HIC" inbox / work queue - Patient chart <p>In the context of the current specification:</p> <ul style="list-style-type: none"> - same lab report/result received through at least two separate channels (i.e. Commercial Labs and OLIS) is considered a duplicate lab report/result - same lab report/result returned by the "OLIS Provider Query" for different "Requesting HICs" in the same clinic is considered duplicate result - same lab report/result returned by one of the "OLIS queries" that already exist within EMR is considered a duplicate. <p>The lab reports/results must show-up:</p> <ul style="list-style-type: none"> - only once in the patient chart - only once in each of the 'Requesting HICs' inbox / work queue <p>Regardless of the method used to manage duplicates, for audit purposes, the EMR Offering must at least log the data fields mentioned in req. # OLIS06.03.</p>	M	U
OLIS04.05	<p>The EMR Offering must display an alternate, meaningful test name in place of the LOINC test name.</p> <p><i>Refer to: "OLIS Nomenclature"</i></p>	<p>The LOINC test name must not be used as a primary way to identify a name of the test results.</p> <p>The Test Name displayed in the EMR Offering must be cross-referenced to one of the following naming conventions:</p> <ul style="list-style-type: none"> • the Alternate Name 1 • Test Name preferred by the physician as defined within the EMR (locally mapped/cross-referenced) 	M	P
OLIS04.06	<p>The EMR Offering must allow the user <u>to act upon unmatched patient</u> lab reports/results received via OLIS.</p>	<p>At a minimum, the EMR Offering must allow the user to</p> <ul style="list-style-type: none"> - match the "unmatched patient" lab reports/results to an existing EMR patient - manage the remaining "unmatched patient" lab reports /results <p>The "matching patient" functionality must be available for:</p> <ul style="list-style-type: none"> - unmatched patients in the "PreLoad Preview" / "Patient Query Preview" - unmatched patients returned by the "OLIS Provider Query" (see OLIS02.03) <p>The "matching to patient" functionality must preserve the original patient demographics (all) returned within the OLIS HL7 message which must be accessible from the EMR Offering user interface.</p>	M	N
OLIS04.07	<p>The EMR user interface to OLIS must be integrated with the EMR Offering.</p>	<p>Requiring user to login on a different system/application to interact with OLIS will not meet the requirement.</p>	M	N

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
OLIS04.08	<p>The EMR Offering must maintain the list of values for each query parameters (provided by OLIS).</p> <p><i>Refer to OLIS Interface Specification</i> - Section: HL7 Message Specification > HL7 Message Structure > Query Message Profile > Query Parameters Matrix</p>	<p>This applies to query parameters for the purpose of the:</p> <ul style="list-style-type: none"> - "OLIS PreLoad Query" - "OLIS Provider Query" - "OLIS Patient Query" 	M	N
OLIS04.09	<p>The EMR Offering must support automated matching of the patient lab reports/results to the EMR patient chart.</p>	<p>The automated match of the lab reports/results to the patient must be based on patient's demographics.</p> <p>In the context of the current specification:</p> <ul style="list-style-type: none"> - <u>matched to the patient lab reports/results</u> are those for which all following patient demographic data elements are matching: <ol style="list-style-type: none"> 1) Health Card Number; 2) Gender; 3) Date of Birth; 4) Last Name - <u>unmatched to the patient lab reports/results</u> are those for which: <ol style="list-style-type: none"> 1) at least one of the patient demographic data elements mentioned above is not matching, OR 2) patients do not exist in the EMR <p>Additional fields to conduct patient matching are allowed.</p>	M	U
OLIS04.10	<p>The EMR Offering must identify lab reports/results that are blocked in OLIS.</p>	<p>Lab reports/results for which a "patient consent directive" exists must be clearly identified as sensitive information (blocked results):</p> <ul style="list-style-type: none"> - in the "PreLoad Preview" and "Patient Query Preview" - once they are permanently saved in the EMR Offering <p>The results report will be available to practitioners within the circle of care but its "sensitive blocked result(s) status" must be clearly identified to all who are able to review the lab reports.</p>	M	U

3.5 ERROR MANAGEMENT

There are three different types of errors that can be returned from OLIS, each corresponding to the three layers of message formatting:

- SOAP (indicated in SOAP Faults)
- XML (indicated in XML Error Messages)
- HL7. Error Segments

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
OLIS05.01	EMR Offering must be able to manage the HL7 error messages. <i>Refer to OLIS Interface Specification</i> - Section: Error Codes > HL7 Error Codes and Messages > Business Error Codes	The EMR Offering must: - provide error notification with associated details upon receiving HL7 error codes - deliver notification and details to applicable recipient(s) (e.g. EMR user, EMR administrator) based on the business need The EMR must handle the failure of any internal functions related to OLIS and must continue operating.	M	U
OLIS05.02	EMR Offering must be able to manage the XML error messages. <i>Refer to OLIS Interface Specification:</i> - Section XML Message Definitions > Errors > XML-encoded errors	The EMR Offering must: - provide error notification with associated details upon receiving XML error codes - deliver notification and details to applicable recipient(s) (e.g. EMR user, EMR administrator) based on the business need The EMR must handle the failure of any internal functions related to OLIS and must continue operating.	M	U
OLIS05.03	The EMR Offering must be able to manage the SOAP error messages. <i>Refer to OLIS Interface Specification:</i> - Section: XML Message Definitions > Errors > SOAP Exceptions	The EMR Offering must: - provide error notification with associated details upon receiving SOAP error messages - deliver notification and details to applicable recipient(s) (e.g. EMR user, EMR administrator) based on the business need The EMR must handle the failure of any internal functions related to OLIS and must continue operating.	M	U
OLIS05.04	Network Error Management	The EMR Offering must provide appropriate notification to user(s) or administrator regarding the applications ability to complete the requested retrieval process. The EMR Offering must be able to retry and re-establish network connectivity and perform the operation at a later time without any human intervention.	M	P

3.6 AUDIT / CERTIFICATION / OTHER

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
OLIS06.01	The EMR Offering must have successfully passed OLIS Conformance Testing.		M	U
OLIS06.02	The EMR Offering must maintain a log all messages sent to or received from OLIS.	<p>At the minimum, log entries must include the following discrete data elements:</p> <ul style="list-style-type: none"> - transaction timestamp - transaction type (e.g. OLIS Preload Query, OLIS Provider Query, OLIS Patient Query, Consent Overwrite, etc.) - Initiating User: the user that initiated the query - Requesting HIC - external system: fixed value OLIS - EMR transaction id: unique EMR event id - OLIS transaction id: the unique ID identifying each HL7 message <p>The log entries will be retained in accordance with regulations governed by the Medicine Act, 1991.</p>	M	U
OLIS06.03	The EMR Offering must maintain a log for lab reports/results removed/rejected from the EMR Offering.	<p>In the context of the current specification:</p> <ul style="list-style-type: none"> - "removing" applies to laboratory information displayed in the: <ul style="list-style-type: none"> > "PreLoad Preview" > "Patient Query Preview" - "rejecting" applies to laboratory information returned by the "OLIS Provider Query" <p>At a minimum the audit log should contain:</p> <ul style="list-style-type: none"> - Query Date: the date the query was generated - Query Type: OLIS Preload Query, OLIS Provider Query, OLIS Patient Query - Query Initiating User: the user/system that initiated the query - Requesting HIC - Removing User: the user / system that removes/rejects laboratory reports - Removal/Rejection Date - Removal/Rejection Reason - Removal Type: whether manual or system removal - Download From: OLIS - ORC.4 (accession number) ; OBR.4 (Test Request); OBR.7 (Collection Date for each Test Request); OBR.22 (last date/time when was updated) 	M	U

4. REPORT IDENTIFICATION GUIDANCE

Please refer to the document titled “OLIS – Report Identification Guidance” on the MOHLTC website.

➤ https://www.ehealthontario.ca/portal/server.pt/community/olis-emr_information/2505

The intent of the document is to provide some guidance to EMR vendors with identifying laboratory reports. The information contained in this document is dynamic and may change over time. This is especially valid since Community Laboratories manage the existing direct lab feeds into the EMR. EMR vendors are advised to validate the information contained in this document before it is used.

5. RETIRED REQUIREMENTS

This section consists of the EMR functional requirements that were retired from EMR-OLIS Specification.

Scoring: **M** = Mandatory criteria
W = Weighted criteria

Status: **N** = New requirement for this EMR Specification
P = Previous requirement from EMR-Specification v4.1
U = Updated from a previous EMR Specification v4.1
R = Retired from previous EMR Specification v4.1

OMD #: unique identifier that identifies each requirement within *Ontario EMR Requirements Repository*

YEAR: the year the requirement became part of the *Ontario EMR Requirements Repository*

YEAR Retired: the year the requirement was retired from the *Ontario EMR Requirements Repository*

OMD #	REQUIREMENT	GUIDELINES	M/W	Status	YEAR	YEAR Retired	COMMENT
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A