

ELECTRONIC MEDICAL RECORDS

EMR–HRM Specification

Version 4.2

FINAL

Date: April 1, 2015



TABLE OF CONTENTS

TABLE OF CONTENTS	2
GLOSSARY	3
1. INTRODUCTION	5
1.1 Hospital Report Manager (HRM) Overview	5
1.1.1 The HRM Provincial Solution	7
1.2 Scope of EMR-HRM Specification	8
1.3 Actors and Workflow Description for HRM-EMR	9
1.3.1 EMR - HRM Business Use Case	10
2. SPECIFICATION TRACEABILITY	11
2.1 Highlights of Changes.....	11
2.2 Related Documents and References	11
3. EMR-HRM FUNCTIONAL REQUIREMENTS	12
3.1 HRM Report Retrieval.....	13
3.2 HRM Report Management.....	14
3.3 Error Management.....	16
3.4 Audit / Certification / Other.....	17
4. HRM XSD SCHEMA– STRUCTURE & BUSINESS RULES	18
4.1 Patient Demographics	20
4.2 Reports Received	24
4.3 Transaction Information	28
5. REPORT IDENTIFICATION GUIDANCE	30
5.1 Duplicate and Changed Reports.....	30
6. HRM XSD SCHEMA – CHANGES	33
6.1 XML elements – Remove, Update and Amend	33
7. RETIRED REQUIREMENTS / HRM CATEGORIES / DATA ELEMENTS	34
7.1 Retired HRM Requirements.....	34
7.2 Retired HRM Data Categories	34
7.3 Retired HRM Data Elements.....	35
8. AMENDED REQUIREMENTS / HRM CATEGORIES / DATA ELEMENTS	36
8.1 Date Amended: N/A.....	36

GLOSSARY

TERM	MEANING
CDS	Core Data Set The sub-set of patient medical data that can be transferred between two EMR Systems and as defined in the CDS XSD Schema.
CDS – XSD Schema	The xml data structure used to transport patient medical data for a single instance of an EMR that is used by one or more physicians in a primary care medical practice.
CNO	College of Nurses of Ontario
CNO Number	The 7 or 8 alphanumeric unique identifier assigned by CNO to registered nurses (RNs), nurse practitioners (NPs) and registered practical nurses (RPNs) in Ontario.
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.
Data Dictionary	The collection of discrete data elements including their definition and relationships and referenced by Ontario EMR Requirements Repository.
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.
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.
HRM System	Hospital Report Manager System The OntarioMD integration engine application that enables the electronic transmission of patient text based report from a hospital (or other facilities) to their practice-based EMR's providers.
HRM Reports	The hospital reports that are downloaded from the HRM System (sFTP server) in xml format and compliant with HRM – XSD Schema.
HRM Report Instance & Version	An “HRM report instance” refers to an HRM report for which the “Report Content” and the “Report Status” is the same regardless the provider recipients to whom the HRM report might have been sent. Any change to at least one of the “Report Content” and/or the “Report Status” is considered a new version of the HRM report
HRM – XSD Schema	The xml data structure that is used to transport HRM reports from HRM System to the EMR Offerings.
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 Provider The attending physician who is primarily responsible for the day-to-day care of patient. In absence, the covering healthcare provider will fulfil the MRP role.
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

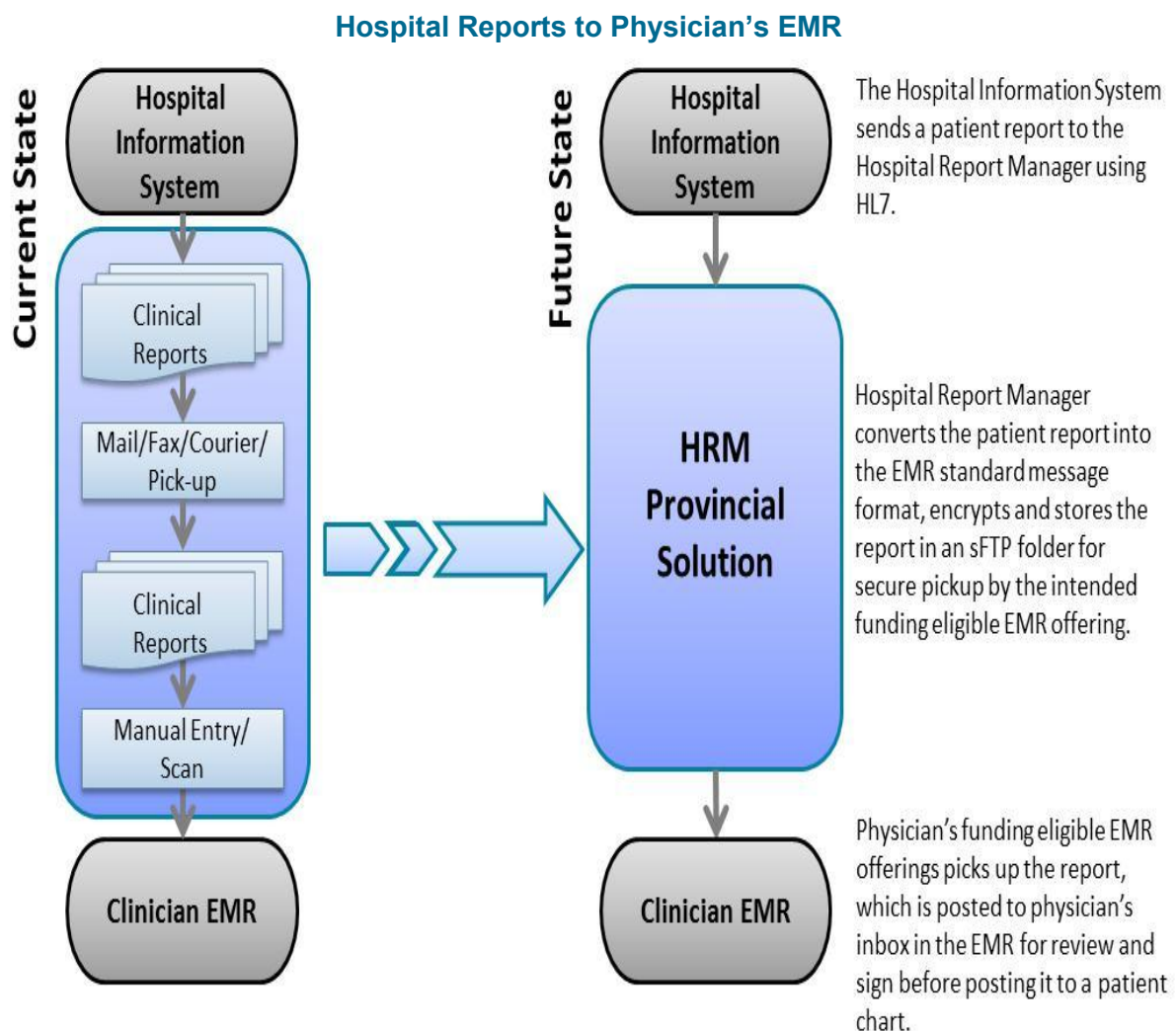
TERM	MEANING
Ontario EMR Requirements Repository	The collection of functional requirements and discrete data elements published by OntarioMD; includes new, existing and retired requirements.
OntarioMD	OntarioMD Inc.
Provider	A person who provides healthcare services to patients.
Provider Recipient	The EMR provider that is identified as "deliver to" in HRM - XSD Schema.
Sending Facility	The name of the health facility (e.g. clinic, hospital) where the medical reports originated. The "Sending Facility" is used interchangeably with "Source Facility".
sFTP	Secure File Transfer Protocol
W	Weighted requirement. The EMR Offering will receive a point value if the requirement is met.
XML	Extensible Mark-up Language. A set of rules for encoding documents in machine-readable form.
XSD Schema	An XML-based language used to describe and control XML.

1. INTRODUCTION

1.1 HOSPITAL REPORT MANAGER (HRM) OVERVIEW

One of the sought after benefits of adopting an EMR is the ability to receive hospital reports electronically from local hospitals.

Hospitals and Independent Health Facilities (IHF) have traditionally sent reports to primary care providers and specialists by producing a paper document and sending via mail, fax, courier or holding it for pick-up by physicians at the hospital. Hospital Report Manager (HRM) enables primary care providers and specialists using a Specification 4.1 (or higher) Certified EMR Offering to receive hospital / IHF reports electronically. HRM sends Medical Record (MR) and Diagnostic Imaging (DI) reports electronically from hospitals or IHFs directly into a patient’s chart within their physician’s EMR. A conceptual diagram of the way HRM works is provided below.



KEY BENEFITS

Benefits of HRM to Physicians and Patients:

- Improves the transition of patient care from hospitals to physicians as they are able to follow up with patients more quickly because hospital reports are available sooner
- Reports are delivered to Certified EMR Offerings as opposed to paper reports which have to be scanned as images to be part of a comprehensive patient record in the EMR
- Reports are searchable and used to trend on report types per patient in the EMR
- More informed clinical decision making¹
- Expedited treatment plan creation and communication¹
- Less reliance on the physician as the clinical team has access to hospital results in the EMR¹
- Administrative and operational savings by reducing manual process of handling paper reports such as printing, filing and scanning
- Increased security of PHI by eliminating the need of requiring hard copy reports to input reports into EMR system

Benefits of HRM to Hospitals and IHFs:

- A single interface to HRM is required instead of developing a proprietary interface to individual primary care providers and specialists
- Administrative and operational savings by reducing manual processes related to distributing reports (e.g., printing, filing, mailing)
- A secure alternative to sending reports manually
- Formal acknowledgement of reports being received through audit trails

1.1.1 The HRM Provincial Solution

Conceptually, data contributors (Hospitals and Independent Health Facilities) connect to HRM and use this channel to send reports to data consumers (Primary Care Providers and Specialists) using a Certified EMR Offering as illustrated in figure 1.0.

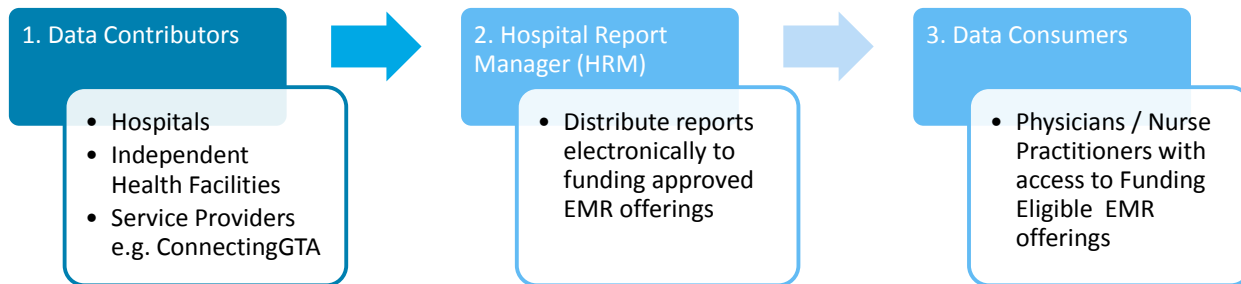


Figure 1.0 Conceptual Overview of the HRM Provincial Solution

Figure 2.0 below provides a more detailed view of how HRM receives reports from hospitals/IHF's, and how it distributes them to the correct recipients/data consumers.

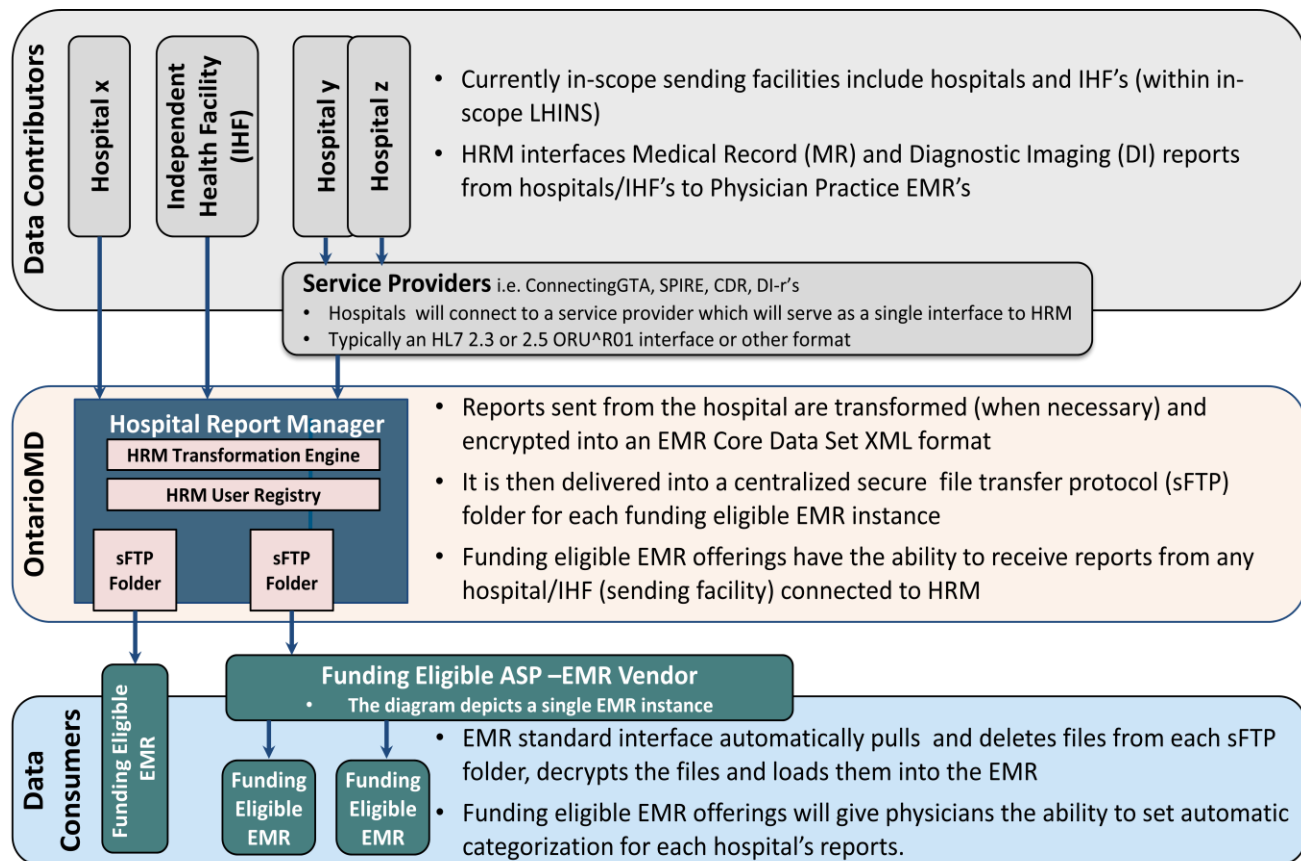


Figure 2.0 High-level functionality of the HRM Provincial Solution

Data contributors send reports using an interface to HRM. HRM transforms the Medical Record (MR) and Diagnostic Imaging (DI) reports into OntarioMD's EMR Core Data Set XML format and places them in a sFTP (secure file transfer protocol) folder from which the physician's spec compliant EMR retrieves them securely.

1.2 SCOPE OF EMR-HRM 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.

The EMR-HRM specification:

- a) Defines requirements to be implemented into the EMR Offerings in order to:
 - Interface with the HRM System and :
 - manage polling of designated sFTP folder (automatically and on-demand) for incoming HRM reports
 - retrieve HRM reports in a consistent format compliant with HRM XSD Schema
 - retrieve HRM reports from the designated sFTP folder
 - remove the HRM reports from the designated sFTP folder after HRM reports have been successfully uploaded into the EMR system
 - Process HRM reports and:
 - manage duplicate reports
 - display reports in patient chart
 - distribute reports to the “provider recipient” inbox
 - manage un-matched reports
 - manage errors
 - Maintain a log of activities involving HRM reports
- b) Defines the HRM Data Set elements
- c) Defines the business rules / restrictions and data conversions that applies to HRM elements
- d) Defines the data type and the length of the xml data elements
- e) Includes HRM XSD Schema:
 - report_manager.xsd
 - report_manager_dt.xsd

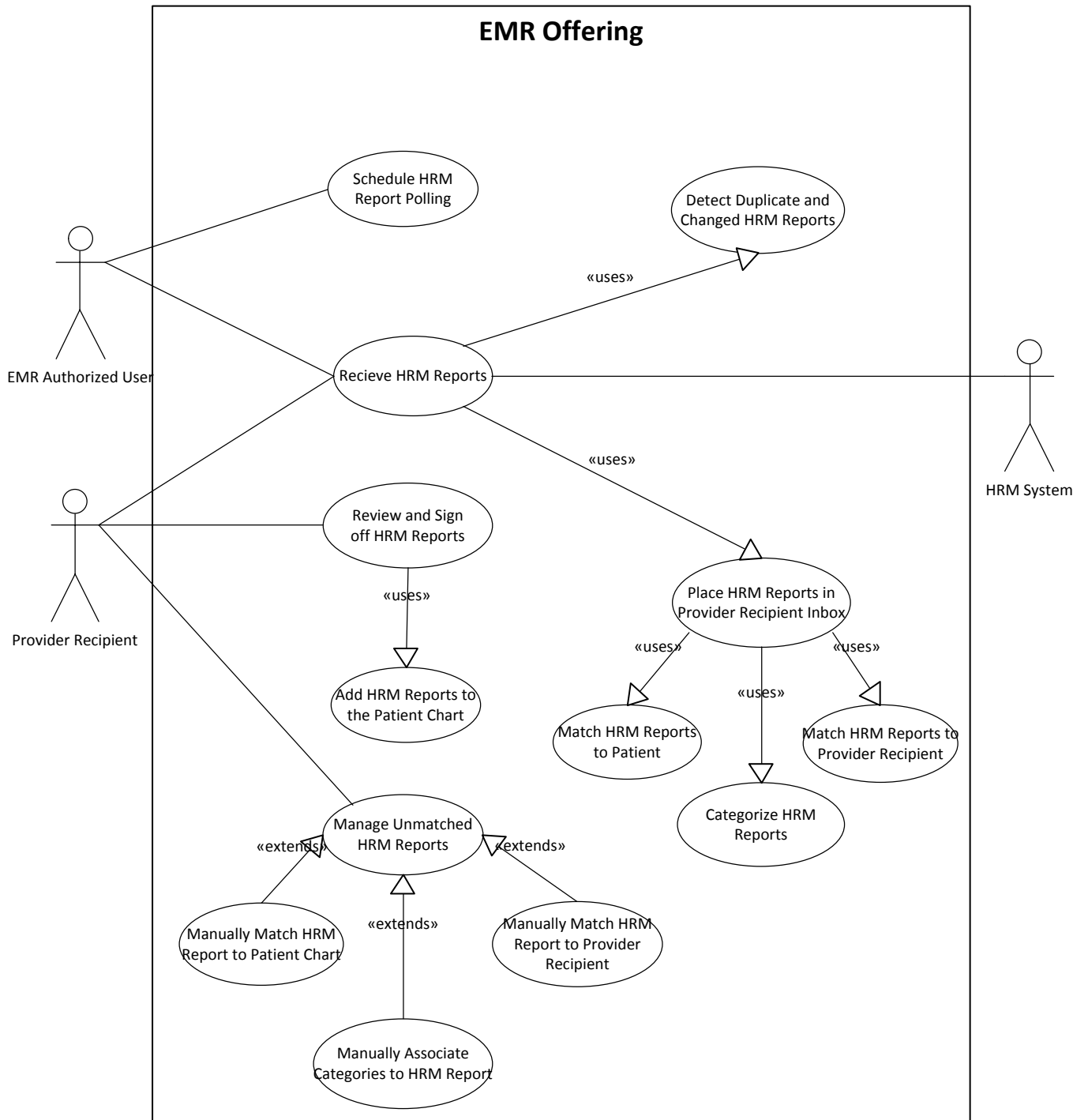
These requirements complement existing “External Document Management” requirements identified in the Core EMR Specification - Section 1: Baseline Requirements.

1.3 ACTORS AND WORKFLOW DESCRIPTION FOR HRM-EMR

The diagram that appears on the following page illustrates:

- How the EMR users interacts with the EMR Offering, HRM System to retrieve HRM reports
- How the HRM reports are processed by the EMR Offering
- Who are the actors
 - EMR Offering
 - HRM System
 - EMR Provider Recipient
 - EMR Authorized User

1.3.1 EMR - HRM BUSINESS USE CASE



DIAGRAM_1: EMR-HRM BUSINESS USE CASE

2. SPECIFICATION TRACEABILITY

2.1 HIGHLIGHTS OF CHANGES

Ontario EMR Specification v4.1A – Appendix F was used as the basis to create this EMR-HRM Specification.

TYPE	# of Requirements v 4.1	# of Requirements v 4.2
New Requirements	6	4
Updated Requirements	1	6
Previous Requirements	15	13
Total Number of Requirements	22	23

* **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-HRM Specification.

DOCUMENT NAME	VERSION	DATE	PUBLISHING ORGANIZATION	LINK
Core EMR Specification Section 1: Baseline Requirements	v4.2	1-Apr-2015	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
Core EMR Specification Section 2: Data Portability	v4.2	1-Apr-2015	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
Core EMR Specification CDS – XSD Schema	v1.2.2	14-Aug-2013	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
Core EMR Specification HRM – XSD Schema	v1.2.2	14-Aug-2013	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
HRM Change Log	v4.2	1-Apr-2015	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
Data Dictionary & Mapping	v4.2	1-Apr-2015	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
EMR Code Tables	v4.2	1-Apr-2015	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/current_emr_specifications
OntarioMD Hospital Report Manager EMR Connectivity Requirements	V2.0	31-Jan-2011	OntarioMD	https://www.ontariomd.ca/portal/server.pt/community/ontario_emr_specifications/historical_documents

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

3. EMR-HRM FUNCTIONAL REQUIREMENTS

This section consists of the EMR functional requirements for EMR-HRM 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 requirement 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*

3.1 HRM REPORT RETRIEVAL

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
HRM01.01	The EMR Offering must automatically pull HRM reports periodically from the HRM System.	<p>The EMR Offering must have a default polling interval. The suggested default polling interval is 30 minutes.</p> <p>The default polling interval must be applied equally to all Provider Recipients at the practice level.</p> <p>The EMR Authorized User (at the practice level) must be able to setup and modify the default polling interval.</p> <p>Contacting the vendor's service desk to setup and modify the default polling interval will not satisfy this requirement.</p> <p><i>Refer to OntarioMD Hospital Report Manager EMR Connectivity Requirements for additional details.</i></p>	M	U
HRM01.02	The EMR Offering must allow the EMR Authorized User to manually pull HRM reports on an ad hoc basis (outside of the regular polling interval).	<p>Requiring the EMR Authorized User to have administrative rights in order to run the ad-hoc request will not satisfy this requirement.</p> <p>Manually pulling reports must not affect the default polling interval setup at the practice level for HRM.</p> <p>Contacting the vendor's service desk in order to facilitate the ad-hoc request to HRM will not satisfy this requirement</p>	M	U

3.2 HRM REPORT MANAGEMENT

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
HRM02.01	The EMR Offering must match the retrieved HRM report to the Provider Recipient within the EMR.	The HRM report must be matched to the Provider Recipient using one of the following identifiers: 1) CPSO unique identifier including a prefix of 'D' (e.g. D#####) <ul style="list-style-type: none"> ▪ D for Doctor ▪ ##### - 5 or 6 digit CPSO number 2) CNO unique identifier including a prefix of 'N' (i.e. N#####) <ul style="list-style-type: none"> ▪ N for Nurse Practitioner ▪ ##### - 7 or 8 alphanumeric CNO number 	M	P
HRM02.02	HRM Reports that have been automatically matched to a Provider Recipient must be accessible from that Provider Recipients inbox / work queue.	Access to HRM reports is limited to the "provider recipient" unless providers are sharing the patients or are covering for each other.	M	U
HRM02.03	The EMR Offering must allow multiple providers to sign-off the same HRM report.	Sign-off must be an attribute of an HRM report version. The date and name of the user that signed-off a HRM report must be visually accessible. Requiring a user to search through the audit log will not satisfy this requirement.	M	N
HRM02.04	The EMR Offering must support a method to identify and resolve the HRM reports received without a provider match in the EMR.	The HRM reports manually matched to a provider must be accessible within the provider inbox / work queue. Contacting the vendor's service desk in order to facilitate manual matching will not satisfy this requirement.	M	P
HRM02.05	The EMR Offering must match the retrieved HRM reports to the EMR patient.	To automatically match an HRM report to the EMR patient all the following patient demographic data elements must match: 1) Health Card Number; 2) Gender; 3) Date of Birth; 4) Last Name Additional fields may be used to conduct patient matching provided the minimum patient demographic information described in the requirements is matched.	M	U
HRM02.06	The EMR Offering files one copy of the HRM report in the patient's chart.	Any associated comments and annotations are retained separately and visually accessible along with the corresponding report copy in the patient chart.	M	P
HRM02.07	The EMR Offering must support a method to identify and resolve the HRM reports received without a patient match in the EMR.	The HRM reports manually matched to a patient must be accessible within the patient's chart. Contacting the vendor's service desk in order to facilitate manual matching will not satisfy this requirement.	M	P

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
HRM02.08	The EMR Offering must automatically categorize report's Class, Sub-Class for Medical Record report types and Class and Accompanying Sub-Class for Diagnostic Imaging report types according to the existing EMR categorization/report organization criteria.	<p>The Class and Sub-Class, defined within the EMR Core Data Set, are used to organize Medical Records reports within a patient's chart. E.g. Medical Record Reports (denoted by a Class = MR and Sub-Class = Consult or Discharge Summary, etc.)</p> <p>The Class and Accompanying Sub-Class, is provided by the Hospital Report Manager for the EMR to organize Diagnostic Imaging reports and their respective modalities within the patient's chart. E.g. Diagnostic Imaging (denoted by a Class = DI) and Accompanying Sub-class = Mammogram radiology reports.</p> <p>§ The EMR may receive reports with more than one Accompanying Sub-Class and will use its business rules for report organization accordingly. e.g. Diagnostic Imaging reports containing Nuclear Medicine & Radiology exams on the same report.</p> <p>§ Enabling the end-user to manually attend to the process of organizing/categorizing reports where different Accompanying Sub-Class exist on the same report</p> <p>Hospitals classify reports using Class, Sub-Class and Accompanying Sub-Class differently. The EMR needs to identify the Sending Facility ID in order to harmonize organization of the reports using the naming convention defined within the EMR.</p>	M	P
HRM02.09	The EMR Offering must support a method to identify and resolve the HRM reports received that are un-matched to an existing class, sub-class, accompanying sub-class within the EMR.	Contacting the vendor's service desk in order to facilitate manual matching will not satisfy this requirement.	M	P
HRM02.10	The EMR Offering must allow EMR Authorized Users to associate categories identified in reports with categories used in the EMR for automated processing.	Report organization/Categorization will be established and applied for all hospital reports received for all report recipients using the same EMR database. Subsequent reports received will match to existing categories within the EMR. The minimum requirement to associate categories defined with the EMR to categories from each sending facility is at the level of sending facility, class and sub-class for Medical Record (MR) reports and sending facility, class and accompanying sub-class for Diagnostic Imaging/Cardio Respiratory (DI/CRT) reports.	M	P
HRM02.11	The EMR Offering must allow an EMR Authorized User and/or the Provider Recipient to manually correct report categorization after posting to the patient chart.		M	P
HRM02.12	The EMR Offering must detect and manage duplicate and changed HRM reports.	<p>The most current report version should be presented in the patient's chart with prior versions accessible when required.</p> <p>Users should be able to easily access all HRM report versions.</p> <p>For additional information refer to section: - 5.1 - Duplicate and Changed Reports</p>	M	P

3.3 ERROR MANAGEMENT

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
HRM03.01	The EMR Offering must alert or message the EMR Administrator if automatic polling is down or unsuccessful.	<p>Supports notification to EMR administrator through an alert and console function if a console is a feature of the offering.</p> <p>At a minimum, the alert must contain:</p> <ul style="list-style-type: none"> > the time stamp for the incident > description of the event (e.g. reports not received) > reason for failure (e.g. network down) <p>Once the initial message is received, the administrator can choose to not receive further notifications for that outage.</p> <p>The functionality must be available to both "local" and "ASP" solutions. Supporting the functionality through the service desk will not meet the requirement.</p>	M	U
HRM03.02	Alert or message to the user and the EMR administrator is provided if manual retrieval is unsuccessful.	<p>Supports notification to EMR administrator and the user through an alert.</p> <p>The functionality must be available to both "local" and "ASP" solutions.</p> <p>Supporting the functionality through the service desk will not meet the requirement.</p>	M	P
HRM03.03	The EMR Offering must be able to re-start the automatic polling mechanism if the mechanism fails.	At a minimum the EMR Offering must attempt to re-connect at the pre-defined polling interval.	M	N

3.4 AUDIT / CERTIFICATION / OTHER

OMD #	REQUIREMENT	GUIDELINES	M/W	Status
HRM04.01	EMR Offering must have successfully passed HRM Conformance Testing.	Refer to : - "OntarioMD Hospital Report Manager EMR Connectivity Requirements" document	M	N
HRM04.02	The EMR Offering must maintain a log of all messages retrieved from HRM.	At a minimum, log entries must include the following discrete data elements: - Retrieval Timestamp - Transaction Type: Identify whether the report was automatically retrieved or manually retrieved - Initiating User: Identify the user that initiated the query (if manual) - Provider Recipient - External System: Fixed value "HRM" The log entries will be retained in accordance with regulations governed by the Medicine Act, 1991.	M	N
HRM04.03	Supports addition of Medical Practice confidentiality statement on printed text reports.	The confidentiality statement must be configurable per practice. The confidentiality statement must appear on every page of the printed report.	M	P
HRM04.04	Supports addition of Medical Practice confidentiality statement on printed binary reports.	The confidentiality statement must be configurable per practice. The confidentiality statement must appear on every page of the printed report.	W	P
HRM04.05	The EMR Offering will be required to extract base64 encoded text (i.e. binary report formats) before rendering the content to the user.	Refer to Section 5.2 - Reports Received for additional information; specifically Data Elements #57 through #59.	M	P
HRM04.06	The EMR Offering must be able to extract from base64 encoded text and render the following file formats: pdf, .tiff, .rtf, .jpg, .gif, .png, .html.		M	P

4. HRM XSD SCHEMA– STRUCTURE & BUSINESS RULES

This section identifies HRM Data Categories using the following headings:

1. Patient Demographic
2. Reports Received
3. Transaction Information

For the purposes of this section, the following terms and abbreviations are defined and shall be applied to all tables in this section:

HRM XSD Schema:

- the data structure that is used to transport HRM reports from HRM System to EMR Offerings
- comprised of HRM categories
- the HRM XSD Schema is a subset of the CDS XSD Schema (refer to Core EMR Specification: Section 2 – Data Portability) and the corresponding data types

HRM XSD Schema - Data Elements and Business Rules

HRM # - represent a unique identifier by which any data element will be identified within HRM XSD Schema. New data elements added to the HRM XSD Schema are identified by 'N'

Data Element:

- a unit of data as set out in the HRM XSD Schema
- (*) - this symbol means that HRM Data Category, or a subsection within a HRM Data Category or a “data element” may be repeated
 - Example of a category: Reports Received
 - Example of a subsection: (*) Accompanying Sub-Class /(*) Accompanying Mnemonic / (*) Accompanying Description / (*) Observation Date/Time.
 - Example of a data element: (*) Contact Purpose

Definition - the detailed description of the Data Element

Required Fields:

- **Y** – field/element guaranteed to be populated by HRM System
- **O** – field/element to be populated by HRM System when provided by HIS
- **N** - field/element not populated by HRM System

Data Type - the characteristic of the data listed

- **DATE:** YYYY-MM-DD
 - YYYY = four-digit year , MM = two-digit month DD = two-digit day of month (01 through 31)
- **DATE/TIME:** YYYY-MM-DDThh:mm:ss.sTZD
 - YYYY = four-digit year, MM = two-digit month, DD = two-digit day of month (01 through 31)

- hh = two digits of hour (00 through 23), mm = two digits of minute (00 through 59)
- ss = two digits of second (00 through 59), s = one or more digits representing a decimal fraction of a second
- TZD = time zone designator (Z or +hh:mm or -hh:mm)

- **NUM:** numeric
- **AN:** alphanumeric
- **AB:** alphabetic

LEN – maximum number of characters that is represented in a particular Data Element

- **NL** - No Limit
- **BOT** – Based On Type
- **TBP** – To Be Provided

CODE SOURCE - the source of the coding system or specific codes that are valid for a given Data Element

BUSINESS RULES – the set of business rules and restrictions that applies to a given data element that supersedes and/or complement the HRM XSD Schema

4.1 PATIENT DEMOGRAPHICS

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
1	Name Prefix	An honorific title used when addressing a person by name.	N	AN	6		
2	(*) Name Part	A part of a name. Typical name parts for person names are first/given names and last/family names.	Y	AN	50		Provided by Hospital Report Manager. For additional information refer to : - Core EMR Specification: Section2-Data Portability / Working with Name Part Elements
3	(*) Name Part Type	Indicates whether the name part is a first/given name or last/family name.	Y	AN	4	See Table CT-002: Name Part Type	Provided by Hospital Report Manager. • "GIV" - for First Name and Middle Name. • FAMC – for Family Name For additional information refer to : - Core EMR Specification: Section2 - Data Portability / Working with Name Part Elements
4	(*) Name Part Qualifier	Indicator to distinguish the person's name for any of the name parts.	Y	AN	2	See Table CT-003: Name Part Qualifier	Provided by Hospital Report Manager. • "CL" - for First Name and Middle Name. • "BR" - for Last Name. For additional information refer to : - Core EMR Specification: Section2 - Data Portability / Working with Name Part Elements
5	(*) Name Purpose	If more than one name is recorded, a Name may have a code advising a system or user which name in a set of names to select for a given purpose.	Y	AN	2	See Table CT-004: Name Purpose	Provided by Hospital Report Manager Value: L - legal
6	Name Suffix	An additional term placed after a person's name.	N	AN	3		
7	Date of Birth	The date on which the patient was born.	Y	DATE	10	W3C Date Standard	Provided by Hospital Report Manager. Date Format: YYYY-MM-DD
8	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.	O	AN	20		Provided by Hospital Report Manager. The Ontario HCN numbers as provided by the hospital but not necessary verified with OHIP.
9	Health Card Version Code	The two digits code associated with Ontario HCN that uniquely identifies the status of that health card.	O	AB	2		Provided by Hospital Report Manager.

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
10	Health Card Expiry Date	The expiration date for the HCN.	N	DATE	10		
11	Health Card Province	The legal entity (province) responsible for assigning the HCN.	O	AB	5	See Table CT-013: Province/State/Territory	Provided by Hospital Report Manager. Value: CA-ON
12	Chart Number	Number used by the medical practice to identify the associated hardcopy chart.	N	AN	15		
13	Gender	The reported sexual identity of a person for administrative purposes.	Y	AN	1	See Table CT-006: Gender	Provided by Hospital Report Manager: • M - Male • F - Female • U - Unknown
14	Unique Vendor ID Sequence	System-specific internal unique key (has no contextual meaning) to uniquely identify the patient within the exporting system.	Y	AN	20		Provided by Hospital Report Manager. EMR to ignore the value in this field.
15	Address Type	At a minimum the EMR Offering must support: - residence address - mailing address	N	AN	1	See Table CT-011: Address Type	
16	Mailing Street Address line 1	The unit and street address for the purpose of postal delivery as declared by the patient.	N	AN	50		
17	Mailing Street Address line 2	The unit and street address for the purpose of postal delivery as declared by the patient.	N	AN	50		
18	Mailing City	The city assigned for postal delivery purposes as declared by the patient.	N	AN	80		
19	Mailing Country & Province/State	The country & province/state for the purpose of postal delivery as declared by the patient.	N	AN	7		
20	Mailing Postal/Zip Code	The postal/zip code for the purpose of postal delivery as declared by the patient.	N	AN	10		
21	Residence Street Address line 1	The street address where the patient lives.	O	AN	50		
22	Residence Street Address line 2	The street address where the patient lives.	O	AN	50		
23	Residence City	City where the patient lives.	O	AN	80		
24	Residence Country & Province/State	The country & province/state where the patient lives.	O	AB	7	ISO 3166-2	ISO 3166-2 - Codes for the representation of names of countries and their subdivisions -- Part 1: Country codes http://www.iso.org/iso/en/ISOOnline.frontpage

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
25	Residence Postal/Zip Code	The residence postal/zip code as declared by the patient.	O	AN	10		
26	Phone Number Type			AN	1	See Table CT-012: Phone Number Type	
27	Residence Phone	The phone number where the patient lives.	O	NUM	25		
28	Preferred Phone	Identify the preferred phone for person contact	N	AB	1		
29	Cell Phone	The cell phone number for contacting the patient.	N	NUM	25		
30	Work Phone	The organization work phone number where the patient can be reached during working hours.	N	NUM	25		
31	Work Phone Extension		N	NUM	5		
32	Preferred Official Language	Official languages are English and French.	N	AN	3		
33	Preferred Spoken Language	Indicates in which language a person prefers to communicate.	N	AN	25		
34	(*) Contact Purpose	The type of a contact person.	N	AN	2		
35	(*) Contact First Name		N	AN	50		
36	(*) Contact Middle Name		N	AN	50		
37	(*) Contact Last Name		N	AN	50		
38	Phone Number Type		N	AN			
39	(*) Contact Residence Phone	The phone number where the contact person lives.	N	AN	25		
40	(*) Contact Cell Phone	The cell phone number for the contact person.	N	AN	25		
41	(*) Contact Work Phone	The organization work phone number where the contact person can be reached during working hours.	N	AN	25		
42	(*) Contact Work Phone Extension	The number used to access the contact's work phone number within an organization.	N	NUM	5		
43	(*) Contact E-Mail Address	The email address preferred by the contact person.	N	AN	50		
44	(*) Contact Note	Additional notes about the contact person.	N	AN	200		
45	Patient Note	Additional notes about the patient.	N	AN	64k		

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
46	Patient Warning Flag	If alerts on file about the person this flag is set to 1 otherwise default is 0.	N	NUM	1		
47	(*) Enrolment Status	Refers to whether the patient is enrolled, his enrolment was terminated or never has been enrolled with a particular physician at a given point in time.	Y	NUM	1		Provided by Hospital Report Manager. Value: "1" EMR to ignore the value.
48	(*) Enrolment Date	Date the patient has been enrolled with a particular physician.	N	DATE	10		
49	(*) Enrolment Termination Date	Date the patient enrolment was terminated with a particular physician.	N	DATE	10		
50	(*) Enrolment Termination Reason	Reason for terminating patient enrolment with a particular physician as provided and defined by the MOHLTC.	N	NUM	2		
51	Primary Physician - First Name	The First Name of the most responsible provider to whom the <u>patient record is assigned to</u> .	N	AN	50		
52	Primary Physician - Last Name	The Last Name of the most responsible provider to whom the patient record is assigned to	N	AN	50		
53	Primary Physician - OHIP Billing Number	The "OHIP Billing Number" of the most responsible provider to whom the patient record is assigned to.	N	NUM	6		
54	Patient E-Mail Address	The email address preferred by the patient.	N	AN	50		
55	Family Member Link	System-specific internal unique key (has no contextual meaning) to uniquely identify the person. Link to one or more family members	N	AN	20		
56	Patient Status	Refers to whether the 'Primary Physician' consider the patient to be 'active', 'inactive', 'deceased' or other values as supported by the practice.	Y	AN	1		Provided by Hospital Report Manager. Value: 'A' EMR to ignore the value.
57	Patient Status Date	Date associated with 'Patient Status'. Refers to the date the patient becomes 'active' or the date the status has been changed.	N	DATE	10		
58	SIN	Social Insurance Number	N	NUM	9		

4.2 REPORTS RECEIVED

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
59	Report Media	The media used for the report.	Y	AN	20	Email Download Portable Media Hardcopy	Provided by Hospital Report Manager. Value: 'Download'
60	Report Format	The format of the report.	Y	AN	50	Text Binary	Provided by Hospital Report Manager. Value is 'Text' or 'Binary' If Report Format equals: <u>Text</u> : Report Content Data Element contains the embedded human-readable text of the report <u>Binary</u> : Report Content Data Element contains a base64 encoded binary file, defined by the Report Type File Extension
61	Report Type File Extension	The extension of the exported file and/or encounter plain text.	Y	AN	50		Provided by Hospital Report Manager. If Report Format equals: <u>Text</u> : Value is "From OMD Report Manager" <u>Binary</u> : Value is the format and extension of the file. Supported file formats: .pdf, .tiff, .rtf, .jpg, .gif, .png, .html
62	Report Content	The content of the HRM report as downloaded from the HRM system.	Y	AN	NL		Provided by Hospital Report Manager. May be text or base64 encoded content. If Report Format equals: <u>Text</u> : Text content will appear in the <i>TextContent tag</i> , where the TextContent tag is a child of the ReportContent tag. The length of a line is determined by the output from the hospital which is variable in length and has no limit. All lines will be joined together in this field in the text sequence received from the sending facility. <u>Binary</u> : The base64 encoded message will appear in the Media tag, where the <i>Media tag</i> is a child of the ReportContent tag.
63	Report Class	Classification of the HRM reports as provided by the source.	Y	AN	60	<i>Subset of Table CT-023: Report Class</i>	Provided by Hospital Report Manager.

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
							Values: Diagnostic Imaging Report (DI) • Cardio Respiratory Report (CRT) • Medical Record Report (MR) The sending facility will provide the codes to OntarioMD to configure and enable the Hospital Report Manager to translate and name the reports accordingly.
64	Report Sub-class	Sub-classification of the MR report as provided by the source.	Y	AN	50		Provided by Hospital Report Manager.
65	Event Occurred Date/Time	Date & Time the MR report has been created (authored).	Y	DATE/TIME	30	W3C Date Standard	Provided by Hospital Report Manager. Date Format: YYYY-MM-DDThh:mm:ss.sTZD
66	Report Received Date/Time	Date & Time the HRM reports have been received by the medical practice. This is not the date the report was recorded in the EMR.	N	DATE/TIME	30		
67	Report Date and Time Reviewed	Date & Time the report has been signed-off (reviewed) by the authorized provider.	N	DATE/TIME	30		
68	Source Author - First Name	First Name of the external provider who authored the report.	N	AN	60		
69	Source Author - Last Name	Last Name of the external provider who authored the report.	O	AN	60		Provided by Hospital Report Manager. Format: MM^LN^FN^AMI^PD • MM - the provider mnemonic used by the sending facility • LN - provider last name • FN - provider first name • AMN - abbreviated middle initial and possible punctuation • PD - provider designation (e.g. "MD")
70	Report Reviewed By	OHIP Billing Number of the authorized who signed-off (reviewed) the report.	N	AN	6		
71	Source Facility ID	Unique ID of the facility that sends HRM reports. This discrete data element is specific to	Y	AN	4		Provided by Hospital Report Manager. The Source Facility (Hospitals or Independent Health Facilities) is responsible for providing the Source

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
		reports downloaded from HRM System.					Facility ID. For the values sent by hospitals, please refer to the MOHLTC Master Numbering System.
72	Source Facility Report Number	Unique ID for a report as provided by the sending facility. This discrete data element is specific to reports downloaded from HRM System.	Y	AN	75		Provided by Hospital Report Manager. The number might be reused by the sending facility over time.
73	(*) Accompanying Sub-Class	The sub-classification of the DI and CRT reports as provided by the source. This discrete data element is specific to DI and CRT reports downloaded from HRM System.	Y	AN	60		Provided by Hospital Report Manager. Accompanying Sub-Class, Accompanying Mnemonic, Accompanying Description and Observation Date Time form a group of fields that can be repeated for multiple "accompanying sub-classes" and/or multiple procedures within the same report.
74	(*) Accompanying Mnemonic	The abbreviated term used by the sending facility to describe procedures/studies as provided by the sending facility This discrete data element is specific to DI and CRT reports downloaded from HRM System.	Y	AN	200		Provided by Hospital Report Manager.
75	(*) Accompanying Description	The description of a procedure/study corresponding to the Accompanying Mnemonic data element as provided by sending facility. This discrete data element is specific to DI and CRT reports downloaded from HRM System.	Y	AN	200		Provided by Hospital Report Manager.
76	(*) Observation Date/Time	Date and Time the observation / service have been performed for each DI and CRT reports as provided by the sending facility (source facility). This discrete data element is specific to DI and CRT reports downloaded from HRM System.	Y	DATE/TIME	30	W3C Date Standard	Provided by Hospital Report Manager. Date Format: YYYY-MM-DDThh:mm:ss.sTZD
77	Report Status	The Status of the HRM report as provided by the sending facility.	Y	AN	1		Provided by Hospital Report Manager.

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
							Values: <ul style="list-style-type: none">• S - Signed By• C - Cancelled (report is null and void)

4.3 TRANSACTION INFORMATION

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
78	Message Unique ID	Unique identifier for each HRM message received from HRM System.	Y	AN	250		<p>Provided by Hospital Report Manager.</p> <p>EMR to record and provide the Message Unique ID as is.</p> <p>MessageUniqueID Format: <Hospital Report Manager Process Date>^<Accession Number>^<Sending Facility>^<Report Class>^<Report Number>^<Message Date>^<Environment Mode>^<Site Instance>^<Report Status>^<Visit Number></p> <p>MessageUniqueID components definition:</p> <ul style="list-style-type: none"> ▪ Hospital Report Manager Process Date <ul style="list-style-type: none"> - unique date provided by HRM specifying when the report was created - format: YYYYMMDDHHMMSSsss (SS is seconds and sss is mili-seconds). ▪ Accession Number <ul style="list-style-type: none"> - unique value and is the key used to identify a specific message from the Sending Facility ▪ Sending Facility - consistent with field #71 above. ▪ Report Class - consistent with field #63 above. ▪ Report Number <ul style="list-style-type: none"> - the report number provided by the sending facility - may not be unique within a Sending Facility ▪ Message Date <ul style="list-style-type: none"> - date and time the message was created by the HRM System - Format: YYYYMMDDHHMM ▪ Environment Mode – refers to whether the reports sent by the Sending Facility are accompanied by patient’s health information or not <ul style="list-style-type: none"> - P - reports with actual personal health information and - T – reports without without patent’s personal health information ▪ Site Instance - the sFTP account name of where the xml file has been downloaded from

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
							<ul style="list-style-type: none"> ▪ Report Status - specifies the status of results consistent with field #77. ▪ Visit Number <ul style="list-style-type: none"> - the unique identifier assigned to each patient visit - is an optional field therefore sending facilities may not provide a visit number within every message <p>Example: <MessageUniqueID>20091007161111480^1830380^3987^MR^1036^200910071610^P^xyfht11^S^1498736585</MessageUniqueID></p> <p><u>IMPORTANT:</u> Both Hospital Report Manager Process Date and Accession Number will be unique per message. Therefore if using Message Unique ID to detect duplicate or changed reports both of these values should be temporarily replaced. Refer to Section 4 for additional information regarding Duplicate and Changed Reports.</p>
79	Deliver To -Provider First Name	Report Recipient First Name is as entered in the HRM Directory	Y	AN	60		Provided by Hospital Report Manager.
80	Deliver To- Provider Last Name	Report Recipient Last Name is as entered in the HRM Directory.	Y	AN	60		Provided by Hospital Report Manager.
82	Deliver To - Provider ID	UserID identifying the recipient of the report.	Y	AN	9		<p>Provided by Hospital Report Manager.</p> <p>The CPSO number of the physician or the CNO number of the nurse identified as the recipient of the HRM report.</p> <p>HRM will generate one report per unique recipient.</p> <p>Format:</p> <ol style="list-style-type: none"> 1) D##### <ul style="list-style-type: none"> ▪ D for Doctor ▪ ##### - 5 or 6 digit CPSO number 2) N##### <ul style="list-style-type: none"> ▪ N for Nurse Practitioner ▪ ##### - 7 or 8 alphanumeric CNO number

5. REPORT IDENTIFICATION GUIDANCE

5.1 DUPLICATE AND CHANGED REPORTS

This section is provided to support the EMR functional requirements for the Hospital Report Manager (HRM). Specifically, this section is meant to:

- Define the various scenarios when duplicate or changed reports will be received by an EMR; and,
- Provide guidance to EMR vendors in terms of the appropriate business logic to process and inform end-users about these types of reports.

Background

Many data fields are provided as part of the Hospital Report Manager transmission. These data fields and the business rules associated with reports received by the EMR need interpretation to allow EMR vendors to develop their product to support management of duplicate or changed reports. The following are principles that are related to duplicate and changed reports:

1. EMR Offering must not allow duplicate reports to appear within the EMR patient chart.
2. EMR Offering must identify duplicate reports and avoid an attended (manual) process for users to manage these reports as part of their workflow.
3. EMR vendors must automatically identify report changes in the patient's chart and to inform the EMR user of the change when the change occurs and subsequently when the changed report(s) are viewed.
4. The HRM does not receive a discrete field containing a Report Revised Date from the Sending Facility (hospital). As such it is important for users to access the report to determine what if any content was changed.
5. The HRM cannot control the sequencing of reports that originate from a Sending Facility (hospital). This can have an impact on the chronological filing of reports within the patient's chart and potentially mislead the user (e.g. a baseline chest x-ray that is delivered after a follow-up x-ray or an x-ray follow-up report is sent electronically after the EMR interface to HRM is active and the user scans/inputs the original baseline x-ray report afterwards). As a result EMR vendors need to consider a function to allow users to re-arrange the order of reports within the patient's chart or inform the user that report order may be out of sequence.
6. A Sending Facility may indicate multiple electronic report recipients per report. The HRM creates a separate replicated report instance for each electronic report recipient as defined by the sending facility (hospital). Each of these report instances will have an identical MessageUniqueID but different DeliverToUserID value i.e. report recipient(s).

Definitions & Distinguishing Characteristics:

1. **Unique Report:** A report that originates from a Sending Facility (hospital) to the Hospital Report Manager and contains new report content. The report may contain one or more electronic report recipients.

Distinguishing Characteristics of a Unique Report:

An electronic report can be considered unique when the HRM sends a unique report to a report recipient and assigns a MessageUniqueID (which is regarded as unique per Sending Facility report).

2. **Exact Duplicate Report:** A report that originates from a Sending Facility (hospital) to the Hospital Report Manager which has the exact same report content. This type of report contains one or more electronic report recipient(s) and the HRM subsequently creates one report per electronic report recipient.

Distinguishing Characteristics of an Exact Duplicate Report:

An electronic report may appear to be a duplicate based on the SendingFacility, ReportNumber and DeliverToUser ID; however, the following needs to be accounted for:

- A Sending Facility may reuse ReportNumber for the same patient and the same DeliverToUserID
 - The MessageUniqueID is used for logging and support and must not be used in its entirety by EMR vendors to distinguish duplicate or changed reports. Any exact duplicate reports re-sent by the SendingFacility to report recipient(s) will have a different MessageUniqueID.
3. **Changed Report:** A report that originates from a Sending Facility (hospital) to the Hospital Report Manager and contains modified report content including the identity of one or more electronic report recipient(s).

Distinguishing Characteristics of a Changed Report:

An electronic report may appear to be changed based on any of the following situations:

- the Result Status (Signed or Cancelled);
- patient identity change (i.e. original report sent for the wrong patient);
- changed report content including the EventDateTime for MR reports or ObservationDateTime for DI reports; or
- addition or removal of content with some description noted by the sending facility that the report was changed.

The SendingFacility, ReportNumber , DeliverToUserID (excluding the MessageUniqueID) are key fields that will guide EMR vendors to automatically detect changed reports.

As a further note, some sending facilities may issue a new report with a new ReportNumber in lieu of using the same report number. Although this will not impact an automated approach to detecting changed reports it is worth noting that different sending facilities have their own policies governing the creation of changed reports.

Recommendations for EMR Vendors:

It is important for EMR vendors to be able to distinguish the difference between duplicate and changed reports.

Options for resolving these situations where one or more reports contain the same SendingFacility, ReportNumber and DeliverToUserID:

- Temporarily replace the *interface-engineProcessedDate* component of the MessageUniqueID with a null or single uniform text character/value and perform a checksum on the file for each report recipient.
- Maintain or generate a checksum associated with each report instance on this basis.
- Compare checksums by exception:
 - If checksums match then the report can be considered a duplicate. The end user recipient needs to be aware of this duplicate report state and to have the EMR resolve this situation.
 - If checksums do not match then the report is not considered to be a duplicate and contains changed content. In this situation, the report is expected (but not guaranteed) to apply to the same patient. If the report does belong to the same patient, the EMR user will need to know that an updated report exists and they must have access to it in order to view any changed content. If the report belongs to a different patient (i.e. to reflect a correction provided by the sending facility) the EMR user will need to be aware of the original report (for a different patient) and that the report has changed to correct the patient information.
 - The HRM is dependent on the order that reports are sent to it by each Sending Facility. In the event that the Sending Facility sends reports out of chronological sequence and the content has changed then the user will need a means of identifying this situation. The MessageUniqueID contains a component called *messageDate* which is provided by the Sending Facility. The EMR might consider referencing this date and time to sequence changed reports. This information is provided to advise EMR vendors about the chronology of reports however it is important to disclaim that this derived messageDate component of the MessageUniqueID is generated by the Sending Facility and OntarioMD cannot guarantee its use.

6. HRM XSD SCHEMA – CHANGES

6.1 XML ELEMENTS – REMOVE, UPDATE AND AMEND

This section consists of the xml data elements within report_manager.xsd or report_manager_dt.xsd that have been added (new), removed, updated or amended, however there might be changes to HRM - XSD Schema that might occur after the publication of this document.

For the complete list of changes to the report_manager.xsd or report_manager_dt.xsd, please refer to Data Dictionary & Mapping / XML_ChangeLog tab. It is essential that implementers keep current regarding any changes to the HRM - XSD Schema.

7. RETIRED REQUIREMENTS / HRM CATEGORIES / DATA ELEMENTS

For the purposes of this section, the following terms and abbreviations are defined and shall be applied to all tables in this section:

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

Status Key: **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*

HRM # unique identifier assigned to each HRM Category or Data Element within HRM XSD Schema

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*

7.1 RETIRED HRM REQUIREMENTS

Following functional requirements have been retired from EMR-Hospital Report Manager (Appendix F) specification.

Refer to Appendix F – Hospital Report Manager Requirements v4.1 for complete information about the following retired requirements.

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

7.2 RETIRED HRM DATA CATEGORIES

Following Data Categories have been retired from EMR-Hospital Report Manager (Appendix F) specification.

Refer to Appendix F – Hospital Report Manager Requirements v4.1 for complete information about the following retired data categories.

HRM #	Retired FROM	HRM CATEGORY	YEAR	YEAR Retired	COMMENTS
N/A	N/A	N/A	N/A	N/A	N/A

7.3 RETIRED HRM DATA ELEMENTS

Following Data Elements have been retired from EMR-Hospital Report Manager (Appendix F) specification.

Refer to Appendix F – Hospital Report Manager Requirements v4.1 for complete information about the following retired data elements.

HRM #	DATA ELEMENT	DEFINITION	REQ FIELD	DATA TYPE	LEN	CODE SOURCE	BUSINESS RULES
<i>N/A</i>							
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>N/A</i>							
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8. AMENDED REQUIREMENTS / HRM CATEGORIES / DATA ELEMENTS

8.1 DATE AMENDED: N/A