

EMR Data Migration

Requirements

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1. INTRODUCTION

The purpose of this document is to describe the functional and non-functional requirements of EMR Offerings participating in an EMR data migration.

1.1 Implementation Documents

The following documents are used collectively to specify the format of a subset of EMR data that can be migrated from one EMR Offering to another.

DOCUMENT NAME & VERSION	PUBLICATION DATE	PURPOSE
EMR Data Migration 5.0 - Business View 1.0	August 4, 2017	Describes EMR data migration key concepts, stakeholder roles and responsibilities, challenges and potential solutions
EMR Data Migration 5.0 -Requirements 1.0	August 4, 2017	Describes the functional and non-functional requirements EMR Offering MUST support for EMR data migrations
EMR Data Migration 5.0 -Implementation Guide 1.0	August 4, 2017	Describes conformance constraints and business rules for exporting and importing EMR data that conforms to the EMR Data Migration Schema
EMR Data Migration Data 5.0 -Dictionary 1.0	August 4, 2017	Defines the data elements, their attributes, and corresponding code sets
EMR Data Migration 5.0 - Schema 1.0	August 4, 2017	Defines the structure of the XML instances to be exported or imported by EMR Offerings
EMR Data Migration Schema 5.0 - Data Types 1.0	August 4, 2017	Defines the datatypes inherited by EMR Data Migration Schema

Table 1 – Implementation Documents

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

1.2 Version History

VERSION	REVISION DATE	NOTES
1.0	2017-08-04	<ul style="list-style-type: none"> a) Updated DP01.01. b) Updated DP01.02. c) Updated DP01.11. d) Added DP01.12. e) Updated DP01.08. f) Updated DP01.09. g) Updated DP02.01. h) Updated DP02.02.
1.1	2021-01-25	<ul style="list-style-type: none"> a) Updated formatting to conform with current specifications template. b) Removed Specification version in document title.

2. DATA MIGRATION - REQUIREMENTS

This section consists of the EMR functional requirements for EMR Data Migration Requirements:

The following terms and abbreviations are defined and shall be applied to all requirement tables in this document:

Support:

M = Mandatory. EMR Offerings certified for this specification **MUST** support this requirement.

O = Optional. EMR vendors **MAY** choose to support this requirement in their certified EMR Offering.

Status:

N = New requirement for this EMR Specification version

P = Previous requirement

U = Updated requirement from a previous EMR Specification

R = Retired requirement from previous EMR Specification

OMD #:

Unique identifier that identifies each requirement within OntarioMD's EMR Requirements Repository

CONFORMANCE LANGUAGE

The following definitions of the conformance verbs are used in this document:

- **SHALL/MUST**: Required/Mandatory
- **SHOULD**: Best Practice/Recommendation
- **MAY**: Acceptable/Permitted

The tables that follow contain column headings named: 1) "Requirements", which generally contains a high-level requirement statement; and 2) "Guidelines", which contains additional instructions or detail about the high-level requirement. The text in both columns are considered requirement statements.

3. EXPORT REQUIREMENTS

3.1 XML File Requirements

OMD #	REQUIREMENT	GUIDELINES	M/O	STATUS
DP01.01	Generates XML files, encoded in UTF-8, that validate against the EMR Data Migration Schema.	The XML files MUST be validated against the EMR Data Migration Schema every time they are created.	M	P
DP01.02	Generates XML files that contain all available data elements as described in the EMR Data Migration Schema and Data Dictionary.	<p>The EMR Offering MUST be able to export EMR data using the mandatory and optional XML elements defined in the EMR Data Migration Schema. In situations where the EMR Data Migration Schema allows for a choice to be made (e.g., uses the XML Choice Compositor), the EMR Offering MUST be able to export data using all of the choice options. For example, the EMR Data Migration Schema allows a patient's address to be expressed in an XML file using one of two approaches: Structured – address data is placed in discrete elements; Formatted – address data is placed as free text in a single element. The EMR Offering MUST be able to export address data using the Structured approach as well as the Formatted approach.</p> <p>EMR users MUST be able to generate the XML files without an EMR vendor attending the process.</p>	M	P
DP01.03	Provides the ability to export the data for all patients of a physician according to the EMR Data Migration Implementation Guide.	<p>At a minimum, the export processes MUST:</p> <ul style="list-style-type: none"> a) Function in a batch mode b) Generate files for all patients on a provider's roster regardless of the "Patient Status" <p>Requiring users to create cohorts and add patients to the cohort is not an accepted solution.</p> <p>EMR users MUST be able to generate the XML files without an EMR vendor attending the process.</p>	M	P
DP01.04	Provides the ability to export records for selected patients within the EMR.	EMR user MUST be able to identify the patient(s) to be included in the data export.	M	P

OMD #	REQUIREMENT	GUIDELINES	M/O	STATUS
		<p>Requiring EMR users to create cohorts and add patients to the cohort is an accepted solution.</p> <p>EMR users MUST be able to generate the XML files without an EMR vendor attending the process.</p>		
DP01.05	Provides the ability to select specific EMR Data Migration Schema data categories (e.g. Demographics, Immunizations, etc.) to be exported.	<p>The requirement applies to export of data for:</p> <ul style="list-style-type: none"> a) All patients of a physician and b) Selected patient(s) <p>EMR Data Migration Schema data categories are defined in the Data Migration Implementation Guide.</p> <p>EMR users MUST be able to generate the XML files without an EMR vendor attending the process.</p>	M	P
DP01.11	Exports patient records to folders named after the most responsible physician: PhysicianFN_PhysicianLN_OHIPBillingNumber using the standard naming format for the XML instances: PatientFN_PatientLN_PatientUniqueID_DOB	<p>Definitions for the folder and file naming conventions:</p> <ul style="list-style-type: none"> a) PhysicianFN = Physician First Name b) PhysicianLN = Physician Last Name c) OHIPBillingNumber = Physician OHIP billing number d) PatientFN = Patient First Name e) PatientLN = Patient Last Name f) PatientUniqueID = Unique Vendor ID Sequence g) DOB = Patient Date of Birth using the format ddmmyyyy 	M	P

3.2 Audit Log Requirements

OMD #	REQUIREMENT	GUIDELINES	M/O	STATUS
DP01.12	EMR vendor MUST provide the ability for physicians to access audit information related to the complete audit trail of any patient Personal Information (PI) and Personal Health Information (PHI) for which the physician was responsible.	<p>Physicians' are required by various policies and legislations (e.g., College of Physician and Surgeons of Ontario record keeping policies, <i>Personal Health Information Protection Act</i>, etc.) to have audit information related to all patient data viewed, created, updated and deleted for which the physician is responsible for. This includes any PI and PHI that is not a part of the Cumulative Patient Profile (e.g., billing data related to a patient).</p> <p>EMR vendors MUST provide a product or service that physicians can use to access audit information following a migration. EMR vendors can satisfy this requirement in several ways. Some examples include:</p> <ul style="list-style-type: none"> a) Local EMR Offerings can be left with the physician once the migration is completed so long as the physician has access to the audit log function in the EMR application. b) EMR vendors can provide a service to host the physician's data and audit information following the migration. <p>EMR vendors can produce human readable audit log file(s) that can be given to the physician. It is acceptable for the audit log file(s) to contain references or codes that are specific to the EMR Offering, so long as it is accompanied with other information to help a human interpret it (e.g., the audit log information could have a patient identifier that is specific to the EMR so long as the physician is also given the patient's first name and last name associated with the identifier).</p>	M	P

3.3 Export Process Requirements

OMD #	REQUIREMENT	GUIDELINES	M/O	STATUS
DP01.06	Creates a 'ReadMe' file as described in section 5.1 Readme File.	Creating one or multiple ReadMe file per export is acceptable as long as the name of the physician and the number of patient files exported per each physician can be clearly identified. In order for this requirement to be met, ReadMe MUST be outputted to a file.	M	P
DP01.07	Creates an 'ExportEventLog' file as described in section 5.2 Patient Records Export Event Log.	In order for this requirement to be met, the Export Event Log MUST be outputted to a file.	M	P
DP01.08	Patient's PI and PHI is secured in transit and at rest according to industry best practices.	EMR vendor MUST provide a means to secure PI and PHI that is being migrated from the source EMR. This applies to: a) XML file(s) b) ReadMe c) ExportEventLog d) Audit Log Information e) Other sources of PI or PHI that are migrated (e.g., a copy of an EMR Offering database) EMR vendor MUST provide a means for the physician migrating the PI or PHI to access the data. For example, if the PI or PHI is in encrypted files or on encrypted media, the EMR vendor MUST provide the physician with the software and keys to decrypt the files or storage media.	M	P
DP01.09	Documents user steps/instructions about how to: a) Generate the export files (e.g., XML instances, ReadMe File, ExportEventLog, Audit Log Information) b) Compress the files c) Encrypt the files Transfer files to media devices		M	P
DP01.10	Vendor MUST provide documents describing processes and/or tools for export support	In order for this requirement to be met, the EMR vendor MUST provide documentation of the support services and their associated costs:	M	P

OMD #	REQUIREMENT	GUIDELINES	M/O	STATUS
		a) Telephone support b) On-site detailed application support c) Application tools to aid in the XML import d) etc. Documentation SHOULD reuse terminology from the EMR Data Migration Specification when referring to equivalent concepts.		

4. IMPORT REQUIREMENTS

4.1 XML Requirements

OMD #	REQUIREMENT	GUIDELINES	M/O	STATUS
DP02.01	Supports import of provisioned patient data for a physician.	<p>The EMR Offering MUST be able to import EMR data using the mandatory and optional XML elements defined in the EMR Data Migration Schema. In situations where the EMR Data Migration Schema allows for a choice to be made (e.g., uses the XML Choice Compositor), the EMR Offering MUST be able to import data using all of the choice options. For example, the EMR Data Migration Schema allows a patient's address to be expressed in an XML file using one of two approaches: Structured – address data is placed in discrete elements; Formatted – address data is placed as free text in a single element. The EMR Offering MUST be able to import address data using the Structured approach as well as the Formatted approach.</p> <p>Data from the XML import file(s):</p> <p>a) MUST be imported into the EMR discrete data fields where applicable (as defined in the EMR Data Migration Schema).</p>	M	P

OMD #	REQUIREMENT	GUIDELINES	M/O	STATUS
		<p>b) Data fields that do not map to discrete data fields in the importing EMR MUST be grouped together and accessible within the EMR module/screen that corresponds to the data category the data is associated with (e.g., Data related to a patient's immunizations for which the importing EMR does not have a discrete data field MUST be available to the EMR user in the module/screen that displays other immunization data).</p> <p>c) Importing unmapped data into the Notes field is not an acceptable solution.</p> <p>This function MUST be available to the EMR user.</p> <p>At a minimum, the import processes MUST function in a batch mode.</p>		

4.2 Import Process Requirements

OMD #	REQUIREMENT	GUIDELINES	M/O	STATUS
DP02.02	Documents user steps/instructions about how to: a) Move export files (i.e. Patient Data, ReadMe.txt, Audit Log Information, and the Export Event Log) from media type to importing system b) De-compress the files Decrypt the files		M	P
DP02.03	Vendor MUST provide documents describing processes and/or tools for import support.	In order for this requirement to be met, the EMR vendor MUST provide documentation of the support services and their associated costs: a) Telephone support b) On-site detailed application support c) Application tools to aid in the XML file import Etc.	M	P
DP02.04	Generates an 'ImportEventLog' file as described in section 5.3 Patient Records Import Event Log.	In order for this requirement to be met, the Import Event Log MUST be outputted to a file.	M	P
DP02.05	Generates 'Import Error Log' file which includes each record that failed to upload for each patient.	Error log file MUST be outputted to a file.	M	P

5. SUPPORTING INFORMATION

5.1 Readme File

The ReadMe file will, at a minimum, include the following information:

- Complete file path (i.e., folder and file names) to where the patient files were exported
- Contact information of the Physician Group from whom the data is being exported
- Name of EMR vendor, Offering and version number (if used) from whom the data is being exported
- Date and Time stamp at time of export
- Name of the physician
- Total patient files exported per individual physician

Example: ReadMe file

Physician Group	"Fairlaine FHN"
EMR Vendor, Product & Version	"Sparrow", "Sparrow Hawk, version 1.3.4"
Date and Timestamp	"January 1, 2007, 12:00am"
Dr. Simon Samson (total patients exported)	"5,238"
Dr. Neil Armstrong (total patients exported)	"25"

Table 2 - Example ReadMe File

5.2 Patient Records Export Event Log

The Export Event Log will at a minimum include the following information:

- Patient ID
- EMR Data Migration Categories and their respective number of occurrences.

Example: "Export Event Log" file.

Patient ID	Family History	Past Health	Problem List	Risk Factor	Allergy & Adverse Reaction	Medication	Immunization	Labs	App	My Clinical Notes	Reports		Care Elements	Alerts & Special Needs
											Text	Binary		
ID0000001	2	7	8	2	1	1253	7	7	7	7	123	234	289	25
ID0000002	5	9	9	3	0	167	8	8	8	8	23	34	0	10
ID0000003	1	3	11	2	1	237	9	9	9	9	0	0	0	15

Table 3 - Example Export Event Log

Note: Patient ID - Unique Vendor ID Sequence in the EMR Data Migration - Data Dictionary.

5.3 Patient Records Import Event Log

The Import Event Log will at a minimum include the following information:

- Patient ID
- EMR Data Migration Categories and their respective number of occurrences within the category that were imported

Example: "Import Event Log" file

Patient ID	Family History	Past Health	Problem List	Risk Factor	Allergy & Adverse Reaction	Medication	Immunization	Labs	Appointments	My Clinical Notes	Reports:		Care Elements	Alerts & Special Needs
											Text	Binary		
ID0000001	2	7	8	2	1	1253	7	7	7	7	123	234	289	25
ID0000002	5	9	9	3	0	167	8	8	8	8	23	34	0	10
ID0000003	1	3	11	2	1	237	9	9	9	9	0	0	0	15

Table 4 - Example Import Event Log

Note: Patient ID - Unique Vendor ID Sequence in the EMR Data Migration - Data Dictionary