OntarioMD Inc.

Electronic Medical Records

SPECIFICATION

Appendix F – Hospital Report Manager Requirements

AMENDMENT

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1. INTRODUCTION

This document defines requirements to be implemented into the EMR Offerings in order to interface with the OntarioMD- Hospital Report Manager (HRM) and process the downloaded hospital reports.

1.1 PREFACE

One of the most requested automation opportunities that hospitals/Local Health Integration Networks (LHINs) and OntarioMD receive is the electronic transfer of hospital reports, such as discharge summary information, from the Hospital Information System (HIS) directly to physician's Electronic Medical Record (EMR). Hospital information exists electronically within the HIS, however much of this information is sent in report format via fax or mail, to the physician's office, after the patient has left the hospital. The information is then entered manually or scanned into the physician's EMR system. The information is not available to discrete EMR fields to facilitate physician workflow; query reports; assist decision support; or to selectively include content in other reports and physician communications.

The electronic routing of information through the Hospital Report Manager benefits both physician practices and hospitals. Physicians using EMRs receive timely hospital report information about their patients. This timely information flow improves the continuity and coordination of care, and reduces medical errors associated with missing and changed information. The hospital's automated interface to the Hospital Report Manager (HRM) reduces administrative overhead and costs associated with chart pulls, filing, and mailing/faxing of patient information.

Deploying a centralized Hospital Report Manager simplifies the transmission of hospital report information into the physicians' EMR by providing a scalable and standards based method of streamlining report information directly to the patient's chart electronically. This approach gives physicians the information they need in the timeframe required to improve patient treatment decisions, improve patient safety and to coordinate more timely follow-up activities. The HRM allows physician EMRs to receive timely hospital reports without developing and supporting expensive proprietary hospital to EMR interfaces.

It is anticipated at the time the EMR products pass Conformance Testing for EMR Specification 4, the OntarioMD HRM pilot will expand to other LHINs within Ontario. With this expansion new report types will be considered for electronic delivery and additional discrete data may become available to enhance the management of hospital reports within EMRs. The OntarioMD EMR Core Data Set related XSD and XML data types may be modified to reflect these changes which EMRs are expected to comply. The flexibility to expand the HRM to accommodate other report types and enhancements to reports is in its ability to specify a sub-set of the EMR Core Data Set as an xsd schema definition and related data types. In this manner the HRM and EMRs can adapt to report changes and enhancements accordingly as the xsd streamlines the EMR import process for hospital report data.

1.2 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

TERM	MEANING
HRM	**H**ospital **R**eport **M**anager
HIS	**H**ospital **I**nformation **S**ystem
MPN	eHealthOntario **M**anaged **P**rivate **N**etwork
XML	E**x**tensible **M**arkup **L**anguage. A set of rules for encoding documents in machine-readable form
XSD	**X**ML **S**chema **D**efinition. An XML-based language used to describe and control XML
SFTP	**S**ecure **F**ile **T**ransfer **P**rotocol

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TERM	MEANING
DI	**D**iagnostic **I**maging report
CRT	**C**ardio **R**espiratory report
MR	**M**edical **R**ecord report
OHIP	**O**ntario **H**ealth **I**nsurance **P**lan
OHN	**O**ntario **H**ealth **N**umber
HCN	**H**ealth **C**ard Number
EMPI	**E**nterprise **M**aster **P**atient **I**ndex
CPSO	The **C**ollege of **P**hysicians and **S**urgeons of **O**ntario

1.3 RELATED DOCUMENTS AND REFERENCES

The following table lists all documents related to, or referenced by, the Software Requirements Specification:

DOCUMENT NAME	VERSION	DATE
EMR Specification 4.0 Main Document	Final / v4.0	17-Jan-2011
Appendix A – EMR Baseline Requirements	Final / v4.0	17-Jan-2011
OntarioMD Hospital Report Manager EMR Connectivity Requirements	Final / v1.0	17-Jan-2011
OntarioMD CDS Schema	v1.1.1	8-Mar -2013
Appendix B – Data Portability Requirements	Final / v4.1A	8-Mar -2013
HRM Schema Definition (HRM xsd); and associated HRM Data Type	v1.1.1	8-Mar -2013

1.4 CHANGE LOG

The following table is a summary of the changes made to this document.

CHANGE	DATE
Updated to include binary files, handling of CNO number, longer Message Unique ID and removal of tokens. Changes are noted with a status of ‘U’ or ‘N’. Please note that the HRM xsd and HRM dt definitions have also been updated.	8-Mar-2013

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1.5 ONTARIOMD HOSPITAL REPORT MANAGER – HIGH-LEVEL DIAGRAM

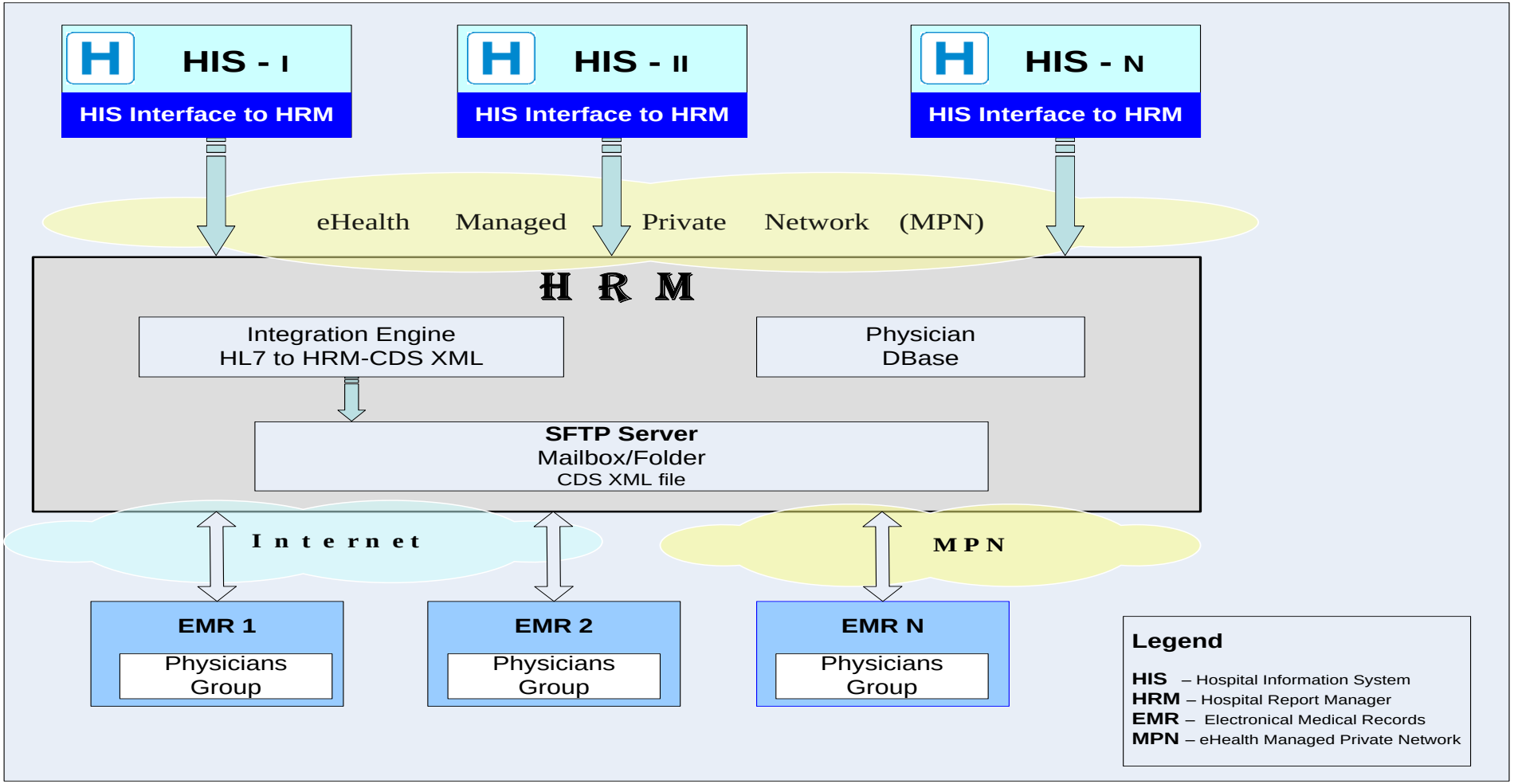

Figure1. OntarioMD Hospital Report Manager Data Flow Diagram

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The major components and flow of electronic information through the Hospital Report Manager (HRM) is depicted in Figure 1. As a hospital (known as a sending facility) routes reports through its HRM interface, the HRM determines the disposition and number of reports to be created for physician recipients. The HRM also determines which EMR instance and physician(s) will receive the report(s) by matching information in its physician data base and then deposits the reports in each EMRs' S/FTP folder. During these processes the HRM transforms the report data into an XML file for each physician. The transformation is based on a subset of the OntarioMD EMR Core Data Set that corresponds to the HRM schema definition (XSD) and data types identified for the specific report types. The reports are automatically retrieved by the corresponding EMRs in a secure manner by applying a digital certificate resident on the EMR and through a secure connection. Following EMR reports retrieval, the EMR manages the content within the physician's S/FTP folder and processes the report into the patient chart and manages all recipients of the report accordingly.

This architecture can support the transformation and routing of additional report types that may be introduced in the future.

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2. EMR - CONNECTIVITY AND ENROLLMENT REQUIREMENTS

Each EMR instance will connect to the OntarioMD S/FTP Server from a secure network with a fixed IP address.

EMR must manage polling of S/FTP folder(s) for incoming messages and removal of messages from the S/FTP server once successfully received and processed by the EMR.

Registration for the Hospital Report Manager involves two steps:

- Registration of EMR instance with OntarioMD
- Enrolment of Physicians with Participating Hospital

For additional information related to EMR Connectivity and Enrolment processes please refer to 'OntarioMD Hospital Report Manager EMR Connectivity Requirements' specification document which can be found on the OntarioMD website at http://www.ontariomd.com/emr.

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3. EMR TO HOSPITAL REPORT MANAGER - FUNCTIONAL REQUIREMENTS

This section consists of the functional requirements for EMR solutions under EMR Specification v4.1A.

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

Status Key: **N** = New requirement for EMR Specification v4.1A
P = Previous requirement from EMR Specification v4.1
U = Updated requirement from previous EMR Specification v4.1

It is important to note that Reporting Requirements identified in "Appendix A: EMR Baseline Requirements" are also part of the HRM Functional Requirements set.

3.1 RETRIEVING REPORTS FROM THE HOSPITAL REPORT MANAGER

Requirement	Guidelines	M/W	Status	Discussion/Comments
a) Allow the automated submission of a request to the HRM for transmission of qualified reports.	Allow the standard query of reports request. The request interval default time is set to 30 minutes that can be modified by the user.	M	P	
b) Allow for the manual ad hoc retrieval of hospital reports.	User can download reports on an ad-hoc basis outside of regular polling intervals.	M	P	
c) Alerts or messages EMR administrator if automatic polling is down or unsuccessful.	Supports notification to EMR administrator through an alert and console function if a console is a feature of the offering. Once the initial message is received, the administrator can choose to not receive further notifications for that outage.	M	P	
d) Alert or message to the user and the EMR Administrator is provided if manual retrieval is unsuccessful.	Supports notification to EMR administrator and the user through an alert.	M	P	

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3.2 PROVIDER MATCHING FOR HOSPITAL REPORT MANAGER

Requirement	Guidelines	M/W	Status	Discussion/Comments
a) Match the retrieved reports to the recipient physician within the EMR using the College of Physicians & Surgeons of Ontario (CPSO) 5 digit unique identifier number with a prefix of 'D' provided by the HRM.	If the CPSO number is not a match, then the physician first and last name (or partial first name) is provided as reference to assist the authorized EMR user to match reports with a physician that is not set-up on the EMR to receive HRM reports.	M	P	
b) Each physician recipient of a report will have their own copy of the report delivered by the HRM and made available in the physician recipient's "in-box"	Consistent with EMR Offerings usual method of managing reports for physician's review.	M	P	Authorized users will be able to access reports retrieved.
c) For physicians that have not been set up in the EMR, reports retrieved from the HRM need to be held in a file for the EMR Administrator to resolve the physician CPSO set-up within the EMR.	System should provide a method to resolve reports received without a physician match in the EMR, consistent with the Offering's usual method of resolving a physician match.	M	P	This would occur if physician has enrolled to receive electronic reports at hospital and OntarioMD but has not been configured within EMR.
d) Match the retrieved reports to the recipient nurse practitioner within the EMR using the College of Nurses of Ontario (CNO) 7 digit unique identifier number with a prefix of 'N' provided by the HRM.	If the CNO number is not a match, then the nurse practitioner first and last name (or partial first name) is provided as reference to assist the authorized EMR user to match reports with a nurse practitioner that is not set-up on the EMR to receive HRM reports. Refer to Section 5.2 Reports Received Data Element #77 and #78 for additional information on report recipients first and last names.	M	N	
e) Each nurse practitioner recipient of a report will have their own copy of the report delivered by the HRM and made available in the recipient's "in-box"	Consistent with EMR Offerings usual method of managing reports for nurse practitioner's review.	M	N	Authorized users will be able to access reports retrieved.

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Requirement	Guidelines	M/W	Status	Discussion/Comments
f) For nurse practitioners that have not been set up in the EMR, reports retrieved from the HRM need to be held in a file for the EMR Administrator to resolve the nurse practitioner CNO set-up within the EMR.	System should provide a method to resolve reports received without a nurse practitioner match in the EMR, consistent with the Offering's usual method of resolving a nurse practitioner match.	M	N	This would occur if a nurse practitioner has enrolled to receive electronic reports at hospital and OntarioMD but has not been configured within EMR.

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3.3 PATIENT MATCHING AND FILING REPORTS

Requirement	Guidelines	M/W	Status	Discussion/Comments
a) Automatically match retrieved reports to the patient's chart within the EMR using the demographic fields provided.	Utilize the following fields for automated patient matching according to the existing EMR patient matching process: 1) Patient Last Name; 2) Health Card Number; 3) Health Card Province; 4) Gender; 5) Date of Birth; and, 6) Patient First Name. Additional fields used to conduct patient matching are allowed.	M	P	
b) A manual matching function of reports to patient chart and subsequent EMR storage by authorized users, for any documents not matched automatically.	Consistent with EMR Offering's management of unmatched patient information.	M	P	
c) The EMR files one copy of the hospital 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	Annotations should be displayed as described in Appendix A.

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3.4 MATCH AND FILE REPORTS (BY CLASS, SUB-CLASS & ACCOMPANYING SUB-CLASS)

Requirement	Guidelines	M/W	Status	Discussion/Comments
a) The EMR must automatically categorize report's Class, Sub-Class for Medical Record report types and Class and Accompanying Sub-Class according to the existing EMR categorization/report organization criteria.	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.) 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 i radiology reports. ➢ 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. ➢ Enabling the end-user to manually attend to the process of organizing/categorizing reports where different Accompanying Sub-Class exist on the same report 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.	M	P	A hospital may add a new Sub-Class and/or Accompanying Sub-Class (i.e. DI procedures) iteratively.

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Requirement	Guidelines	M/W	Status	Discussion/Comments
b) The EMR must allow 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	
c) EMR to allow an authorized user and/or the report recipient to manually correct report categorization after posting to the patient chart, if required.		M	P	
d) The EMR has the capability to resolve the following situations pertaining to reports retrieved from the HRM: 1) Unmatched patient 2) Unmatched physician 3) Unmatched categories (class and sub-class for MR reports; class and accompanying sub-class for DI / CRT reports)	Authorized users to manually correct situations within EMR work queue.	M	P	

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3.5 MANAGE REPORT DUPLICATES, CHANGES AND CANCELLED REPORTS

Requirement	Guidelines	M/W	Status	Discussion/Comments
a) The most current report instance should be presented in the patient's chart with prior versions accessible when required.	Users should be able to easily access all report instances.	M	P	

3.6 PRINTING REPORTS

Requirement	Guidelines	M/W	Status	Discussion/Comments
a) Supports addition of Medical Practice confidentiality statement on printed text reports.	The confidentiality statement must be configurable per practice. This applies to all HRM reports. The confidentiality statement must appear on every page of the printed report.	M	U	
b) Supports addition of Medical Practice confidentiality statement on printed binary reports.	The confidentiality statement must be configurable per practice. This applies to all HRM reports. The confidentiality statement must appear on every page of the printed report.	W	N	

3.7 RENDERING REPORTS

Requirement	Guidelines	M/W	Status	Discussion/Comments
a) 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	N	

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Requirement	Guidelines	M/W	Status	Discussion/Comments
b) 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	N	

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4. 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 products should not allow duplicate reports to appear within the EMR patient chart.
2. EMR products should identify duplicate reports and avoid an attended (manual) process for users to manage these reports as part of their workflow.
3. EMR vendors should 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. The HRM creates a separate report for each electronic report recipient as defined by the sending facility (hospital).Each of these reports will have a different MessageUniqueID as each report instance is created for each of the DeliverToUserID 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 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.*

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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 (although this is likely quite rare)
- The MessageUniqueID is used for logging and support and should not be used 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);
- the addition or removal of a DeliverToUserID;
- 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 both the Hospital Report Manager Process Date and Accession Number 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

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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 created 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.

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5. HRM CDS ELEMENTS – STRUCTURE & BUSINESS RULES

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

Data Element means a unit of data as set out in the CDS Schema.

Required Fields:

- **Y** – field/element guaranteed to be populated by HRM (OntarioMD)
- **O**– field/element to be populated by HRM when provided by HIS
- **N** - field/element never populated by HRM

Definition means a detailed description of the Data Element.

Data Type means 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**: 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

FORM means a predefined data format designed to further define the Data Element (e.g. text, numeric, code, date format).

- **Code:** codes that are valid for a given data element.. The Code Source is further defined for the code(s) used within the corresponding Code Source & Business Rules section.
- **Text**
- YYYY-MM-DD or YYYY-MM-DDThh:mm:ss.sTZD

Status Key: **N** = New requirement for EMR Specification v4.1A
P = Previous requirement from EMR Specification 4.1
U = Updated requirement from previous EMR Specification 4.1

Code Source & Business Rules – as relates to Core Data Set elements and HRM

(*) this symbol means that CDS Data Category, or a subsection within a CDS Data Category or a data element may be repeated.

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5.1 PATIENT DEMOGRAPHICS

The Patient Demographics table reflects the existing table specified in CMS Spec 3.02 / Appendix A.

Table 1: Patient Demographics

HRM #	DATA ELEMENT	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
1	Name Prefix	N	An honorific title used when addressing a person by name.	AN	Code	6	P	
2	(*) Name Part	Y	A part of a name: ▪ given names and ▪ family name	AN	Text	50	P	Refer to Appendix B / 3.6 for additional information. Provided by Hospital Report Manager.
3	(*) Name Part Type	Y	Indicates whether the name part is a given name, middle name or initial, family name.	AN	Code	4	P	Provided by Hospital Report Manager: ▪ "GIV" - for First Name and Middle Name. ▪ FAM – for Family Name Refer to Appendix B / 3.6 for additional information.
4	(*) Name Part Qualifier	Y	For any corresponding name a qualifier is required to distinguish the persons name	AN	Code	2	P	Provided by Hospital Report Manager: ▪ "CL" - for First Name and Middle Name. ▪ "BR" - for Last Name. Refer to Appendix B / 3.6 for additional information.
5	(*) Name Purpose	N		AN	Code	2	P	
6	Last Name Suffix	N	An additional term placed after a person's name	AN	Code	3	P	
7	Date of Birth	Y	The date on which a person was born.	DATE	YYYY-MM-DD	10	P	Provided by Hospital Report Manager.
8	Health Card	O	Health Card identifier for the person's primary healthcare insurance (e.g. OHN)	AN	Text	20	P	Provided by Hospital Report Manager: Keyed OHIP number is understood to be MOD 10 checked by hospital but not verified with OHIP. Only Ontario HCN numbers to be provided.
9	Health Card Version	O	Currently Ontario HCN version code associated with Health Card	AB	Text	2	P	

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HRM #	DATA ELEMENT	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
10	Health Card Expiry Date	N	Currently OHN Health Card Expiry Date	DATE	YYYY-MM-DD	10	P	
11	Health Card Province	O	Province pertaining to Health Card	AB	Code	5	P	Provided by Hospital Report Manager: Value: “CA-ON”
12	Chart Number	N	Number used by the medical practice to identify the associated hardcopy chart	AN	Text	15	P	
13	Gender	Y	The reported sexual identity of a person for administrative purposes. This attribute may or may not be sufficient to describe a client’s physiological sex or gender identity, especially in relation to society or culture.	AN	Code	1	P	Provided by Hospital Report Manager. Values: ▪ M - Male ▪ F - Female ▪ U - Unknown
14	Unique Vendor ID Sequence	Y	System-specific internal unique key (has no contextual meaning) to uniquely identify the person. Must be unique for per patient record.	AN	Text	20	P	Provided by Hospital Report Manager: EMR to ignore the value in this field.
15	Mailing Street Address line 1	N	A line of text that may include unit and street address information or postal delivery information within a municipality.	AN	Text	50	P	
16	Mailing Street Address line 2	N	A line of text that may include unit and street address information or postal delivery information within a municipality.	AN	Text	50	P	

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HRM #	DATA ELEMENT	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
17	Mailing City	N	A line of text that includes the city for postal delivery purposes	AN	Text	80	P	
18	Mailing Country & Province/State	N	A code associating a country subdivision to an address	AB	Code	7	P	
19	Mailing Postal/Zip Code	N	A code that is assigned by a country's postal service to a postal delivery area.	AN	Code	10	P	
20	Residence Street Address line 1	O	A line of text that may include unit and street address information or postal delivery information within a municipality.	AN	Text	50	P	
21	Residence Street Address line 2	O	A line of text that may include unit and street address information or postal delivery information within a municipality.	AN	Text	50	P	
22	Residence City	O	City where the person lives	AN	Text	80	P	
23	Residence Country & Province/State	O	A code associating a country subdivision to an address.	AB	Code	7	P	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
24	Residence Postal/Zip Code	O	A code that is assigned by a country's postal service to a postal delivery area.	AN	Code	10	P	
25	Residence Phone	O	Phone number where person lives	NUM	Text	25	P	
26	Preferred	N	Identify the preferred	AB	Code	1	P	

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HRM #	DATA ELEMENT	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
	Phone		phone for person contact					
27	Cell Phone	N	Preferred cell phone number for person contact	NUM	Text	25	P	
28	Work Phone Extension	N	A number used after dialling the telephone number in order to access a person's personal telephone within an organization.	NUM	Text	5	P	
29	Work Phone	N	A person's work telephone or organization phone number where the person is works	NUM	Text	25	P	
30	Preferred Official Language	N	English or French language	AN	Code	3	P	
31	Preferred Spoken Language	N	Indicates in which language a person prefers to communicate.	AN	Text	25	P	
32	(*) Contact Purpose	N	The type of a contact person	AN	Code	2	P	
33	(*) Contact Last Name	N	Contact Last Name	AN	Text	50	P	
34	(*) Contact First Name	N	Contact First Name	AN	Text	50	P	
35	(*) Contact Middle Name	N	Contact Middle Name	AN	Text	50	P	
36	(*)Contact Residence Phone	N	The telephone of the contact person.	AN	Text	25	P	
37	(*) Contact Cell Phone	N	The telephone of the contact person.	AN	Text	25	P	

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HRM #	DATA ELEMENT	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
38	(*) Contact Work Phone	N	The telephone of the contact person.	AN	Text	25	P	
39	(*) Contact Work Phone Extension	N	A number used after dialling the telephone number in order to access a Contact's telephone within an organization.	NUM	Text	5	P	
40	(*) Contact email Address	N	The email address preferred by the contact person	AN	Text	50	P	
41	(*) Note about Contact Person	N	General Note about the contact person if available	AN	Text	200	P	
42	Note About Patient	N	Additional Notes about the patient	AN	Text	64k	P	
43	Patient Warning Flags	N	If alerts on file about the person this flag is set to 1 otherwise default is 0	NUM	Code	1	P	
44	Enrollment Status	Y	Rostered Patients.	NUM	Code	1	P	Provided by Hospital Report Manager Value: '1' EMR to ignore the values
45	Enrollment Date	N	Date the Patient was Rostered	DATE	YYYY-MM-DD	10	P	
46	Enrollment Termination Date	N	Date the patient was terminated from the roster	DATE	YYYY-MM-DD	10	P	
47	Termination Reason	N	Reason the patient was terminated	NUM	Code	2	P	
48	Primary Physician ID	N	Physician's OHIP Billing Number	NUM	Text	6	P	
49	Primary Physician First Name	N	First Name of Primary Physician	AN	Text	50	P	
50	Primary Physician Last	N	Last Name of Primary Physician	AN	Text	50	P	

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HRM #	DATA ELEMENT	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
	Name							
51	Person email	N	The email address preferred by the person / patient	AN	Text	50	P	
52	Family Member Link	N	System-specific internal unique key (has no contextual meaning) to uniquely identify the person. Link to one or more family members	AN	Text	20	P	
53	Person Status	Y	Active or Inactive or deceased status of the person/patient	AN	Code	1	P	Provided by Hospital Report Manager Value: 'A' EMR to ignore the values
54	Person Status Date	N	The date on which the person was legally declared to have died or became inactive	DATE	YYYY-MM-DD	10	P	
55	SIN	N	Social Insurance Number	NUM	Text	9	P	

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5.2 REPORTS RECEIVED

The following tables reflect existing CDS elements and new elements that are required for the schema of reports received from HRM.

Table 2: Existing Elements

HRM #	DATA ELEMENT CDS	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
56	Report Media	Y	The media used for the report.	AN	Code	20	P	Provided by Hospital Report Manager: Value is 'Download'
57	Report Format	Y	The format used for the report.	AN	Code	50	U	Provided by Hospital Report Manager: Value is 'Text' or 'Binary' If Report Format equals: Text: Report Content Data Element contains the embedded human-readable text of the report Binary: Report Content Data Element contains a base64 encoded binary file, defined by the Report Type File Extension
58	Report Type File Extension & Version	Y	Version that pertains to the Report Type	AN	Text	50	U	Provided by Hospital Report Manager: If Report Format equals: Text: Value is "From OMD Report Manager" Binary: Value is the format and extension of the file. Supported file formats: .pdf, .tiff, .rtf, .jpg, .gif, .png, .html
59	Report Content	Y	Text content of the Report	AN	Text	No Limit	U	May be text or base64 encoded content. Provided by Hospital Report Manager: If Report Format equals: Text: Text content will appear in the Text Content tag, where the Text Content tag is a child of the Report Content 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. Binary: The base64 encoded message will appear in the Media tag,

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HRM #	DATA ELEMENT CDS	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
								where the Media tag is a child of the Report Content tag.
60	Report Class	Y	These are subcategories for Reports	AN	Code	50	P	Provided by Hospital Report Manager: • DI (Diagnostic Imaging Report) • CRT (Cardio Respiratory Report) • MR (Medical Record Report) The sending facility will provide the codes to OntarioMD to configure and enable the Hospital Report Manager to translate and name the reports accordingly.
61	Report Sub-class	Y	Report Sub-class will be provided as received by the sending facility for MR reports only.	AN	Text	60	P	Provided by Hospital Report Manager.
62	Event Occurred Date/Time	Y	Date and Time as provided by sending facility for MR reports only.	DATE	YYYY-MM-DDThh:mm:ss.sTZD	30	P	Provided by Hospital Report Manager. Contains the date and time when the Report was Authored.
63	Report Date and Time Received	N	Date and time report was received in the medical practice.	DATE	YYYY-MM-DDThh:mm:ss.sTZD	30	P	
64	Report Date and Time Reviewed	N	Date and time report was reviewed	DATE	YYYY-MM-DDThh:mm:ss.sTZD	30	P	
65	Report Principal Author First Name	N	Identity of principal author of the report - First Name	AN	Text	60	P	See “Report Principal Author Last Name”
66	Report Principal	O	Identity of principal author of the report -	AN	Text	60	P	Provided by Hospital Report Manager: Where available information pertaining to the following Report

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HRM #	DATA ELEMENT CDS	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
	Author Last Name		Last Name					Principal Author will be provided in this single field which can include ▪ The Provider Mnemonic used by the sending facility delimited by "^" followed by ▪ Last Name delimited by "^" followed by ▪ First Name delimited by "^" followed by ▪ Abbreviated Middle initial and possible punctuation delimited by "^" followed by ▪ Provider Designation e.g. "MD".
67	Report Reviewed By	N	OHIP Identity of the physician that reviewed the Report	AN	NUM	6	P	

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Table 3: Existing Elements

HRM #	DATA ELEMENT	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
68	Sending Facility	Y	Unique ID for a hospital. EMPI number. Value is hard coded	AN	NUM	4	P	Provided by Hospital Report Manager: MOHLTC's Institution number.
69	Sending Facility Report Number	Y	The report's unique identifier as provided by sending facility.	AN	Text	75	P	Provided by Hospital Report Manager. The number might be reused by the sending facility over time.
70	Accompanying Sub-Class	Y	Accompanying Sub-Class will be provided as received by the sending facility for CRT / DI reports only.	AN	Text	60	P	Provided by Hospital Report Manager. Sending facility generates a report which can have one procedure that is part of the accompanying sub-class or multiple procedures that are part of other sub-classes Accompanying Sub-Class, Accompanying Mnemonic, Accompanying Description and Observation Date Time form a group of fields that can be repeated for multiple sub-classes and/or multiple procedures within the same report. The HRM xsd definition specifies that there can be more than one grouping of these fields.
71	Accompanying Mnemonic	Y	An Accompanying Mnemonic is an abbreviated term used by the sending facility to describe procedures/studies for CRT/DI reports.	AN	Text	200	P	Provided by Hospital Report Manager:
72	Accompanying Description	Y	Description provides an explanation for the Accompanying Mnemonic (procedure mnemonics) as provided by sending facility for CRT / DI reports.	AN	Text	200	P	Provided by Hospital Report Manager.

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HRM #	DATA ELEMENT	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
73	Observation Date Time	Y	Date and Time that the observation/service was performed for each of the procedures/studies. (This corresponds to the associated Accompanying Mnemonic and Description)	DATE	YYYY-MM-DDThh:mm:ss.sTZD	30	P	Provided by Hospital Report Manager.
74	Result Status	Y	Status of message from Hospital Report Manager.	AN	Text	1	P	Provided by Hospital Report Manager: ▪ S - Signed by the responsible author and Released by health records ▪ C - Cancelled (Report is null and void)
75	Message Unique ID	Y	Unique identifier for each message.	AN	Text	250	U	Provided by Hospital Report Manager: This will be a combination of the below components: ▪ Hospital Report Manager Process Date ▪ Accession Number ▪ Sending Facility ▪ Report Class ▪ Report Number ▪ Message Date ▪ Environment Mode ▪ Site Instance ▪ Report Status ▪ Visit Number The EMR is required to record and provide this ID as is. 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> A brief description of each Message Unique ID component is provided below:

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HRM #	DATA ELEMENT	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
								Hospital Report Manager Process Date is a unique date provided by HRM specifying when the report was created. The format is YYYYMMDDHHMMSSsss (SS is seconds and sss is mili-seconds). **Accession Number** this value is unique and is the key used to identify a specific message from the Sending Facility. **Sending Facility** is consistent with field #68 above. **Report Class** is consistent with field #60 above. **Report Number** specifies the report number provided by the hospital (which may not be unique within a given hospital/sending facility). **Message Date** specifies the date and time the message was created by the Hospital Information System. The format is YYYYMMDDHHMM. **Environment Mode** contains 'P' when sending production reports with actual personal health information and 'T' when sending test reports with no personal health information. **Site Instance** represents the sFTP account name of where the file has been downloaded from. **Report Status** specifies the status of results consistent with field #74. **Visit Number** captures the unique identifier assigned to each patient visit. This is an optional field therefore sending facilities may not provide a visit number within every message. e.g. sample content within the Message Unique ID field: <MessageUniqueID>20091007161111480^1830380^3987^MR^1036^200910071610^P^xyfht11^S^1498736585</MessageUniqueID> IMPORTANT: 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

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HRM #	DATA ELEMENT	REQ FIELD	DEFINITION	DATA TYPE	FORM	LEN	STATUS	CODE SOURCE & BUSINESS RULES
								additional information regarding Duplicate and Changed Reports.
76	Deliver To User ID	Y	UserID identifying the recipient of the report.	AN	Text	8	U	Provided by Hospital Report Manager. Format: 1) D##### ▪ D for Doctor ▪ ##### - 5 digit CPSO number 2) N####### ▪ N for Nurse Practitioner ▪ ####### - 7 digit CNO number HRM will generate one report per unique recipient.
77	Deliver To User ID First Name	Y	Report Recipient First Name is as entered in the HRM Directory	AN	Text	60	P	Provided by Hospital Report Manager.
78	Deliver To User ID Last Name	Y	Report Recipient Last Name is as entered in the HRM Directory.	AN	Text	60	P	Provided by Hospital Report Manager.

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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 removed, updated or amended.

XML Element Name	File & File Version	Previous Value	New Value	Change Type	Date Change
<xs:element name="MessageUniqueID">	report_manager	<xs:maxLength value="50"/>	<xs:maxLength value="250"/>	Update	February 22, 2013
<xs:simpleType name="address.structured.line">	report_manager_dt	<xs:minLength value="1"/>	<xs:minLength value="0"/>	Update	February 22, 2013
<xs:simpleType name="address.structured.line">	report_manager_dt	<xs:restriction base="xs:token">	<xs:restriction base="xs:string">	Update	February 22, 2013
<xs:element name="City">	report_manager_dt	<xs:restriction base="xs:token">	<xs:restriction base="xs:string">	Update	February 22, 2013
<xs:element name="Number">	report_manager_dt	<xs:restriction base="xs:token">	<xs:restriction base="xs:string">	Update	February 22, 2013
<xs:element name="Version" minOccurs = "0">	report_manager_dt	<xs:restriction base="xs:token">	<xs:restriction base="xs:string">	Update	February 22, 2013
<xs:simpleType name="personNamePart">	report_manager_dt	<xs:restriction base="xs:token">	<xs:restriction base="xs:string">	Update	February 22, 2013
<xs:element name="phoneNumber">	report_manager_dt	<xs:restriction base="xs:token">	<xs:restriction base="xs:string">	Update	February 22, 2013
<xs:simpleType name="postalCode">	report_manager_dt	<xs:restriction base="xs:token">	<xs:restriction base="xs:string">	Update	February 22, 2013
<xs:simpleType name="reportSubClass">	report_manager_dt	<xs:restriction base="xs:token">	<xs:restriction base="xs:string">	Update	February 22, 2013
<xs:simpleType name="blank">	report_manager_dt	<xs:enumeration value=" ">	<xs:enumeration value="">	Update	February 22, 2013
<xs:simpleType name="reportFormat">	report_manager_dt	<xs:enumeration value="Audio File">		Remove	February 22, 2013
<xs:simpleType name="reportFormat">	report_manager_dt	<xs:enumeration value="Image">		Remove	February 22, 2013
<xs:simpleType name="reportFormat">	report_manager_dt		<xs:enumeration value="Binary">	Update	February 22, 2013
<xs:element name="Physician" type="cdsd:personNameSimple"/>	report_manager	<xs:element name="Physician"	<xs:element name="Provider"	Update	February 22, 2013

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