

# Health Report Manager (HRM)

Input Specification v1.1.0



## Version Control

Version #	Summary of Change	Changed By
1.0.0	Initial Publication	Chris Mota
1.1.0	<ul style="list-style-type: none"> <li>Updated allowed recipient repetitions from 20 to 25</li> <li>Updated several fields to emphasis fixed values for their usage.</li> </ul>	Chris Mota

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# 1. Introduction

## 1.1. Who Should Use This Document



This document outlines the input specification to enable the distribution of reports through **Health Report Manager (HRM)**.

This is a technical specification document, intended to be read by clinical system administrators and interface developers who are building interfaces for the purpose of transmitting reports through HRM.

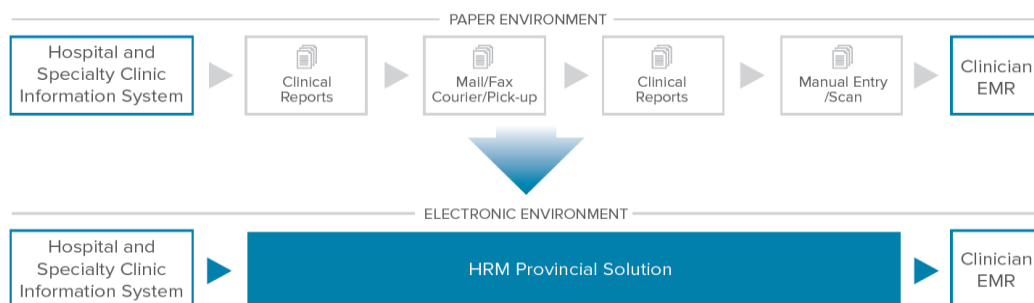
## 1.2. What is HRM?

HRM is an eHealth solution that enables clinicians using an OntarioMD-certified EMR to securely receive patient reports electronically from participating hospitals and specialty clinics.

Traditionally, hospitals and specialty clinics have sent reports to primary care providers and specialists by producing a paper document and sending by mail, fax or courier, or holding it for pick-up by clinicians. HRM electronically delivers the following report types from the hospital or specialty clinic directly into a patient's record, within the clinician's EMR:

- Medical Record (e.g. Discharge Summary)
- Diagnostic Imaging (excluding image)
- eNotifications – near real-time messages to notify them when their patients are discharged from the Emergency Department or are admitted or discharged from in-patient units.

The diagram below shows how HRM works:



- The health information system (HIS) sends a patient report to the Health Report Manager using HL7 (a comprehensive framework and related standards for the exchange, integration, sharing, and retrieval of electronic health information that supports clinical practice and the management, delivery and evaluation of health service)
- HRM converts the patient report into the EMR standard message format, encrypts and stores the report in a Secure File Transfer Protocol (SFTP) folder for secure pickup by the intended OntarioMD-certified EMR
- The clinician's EMR picks up the report, which is posted to the patient's record and the clinician's inbox for review and sign-off

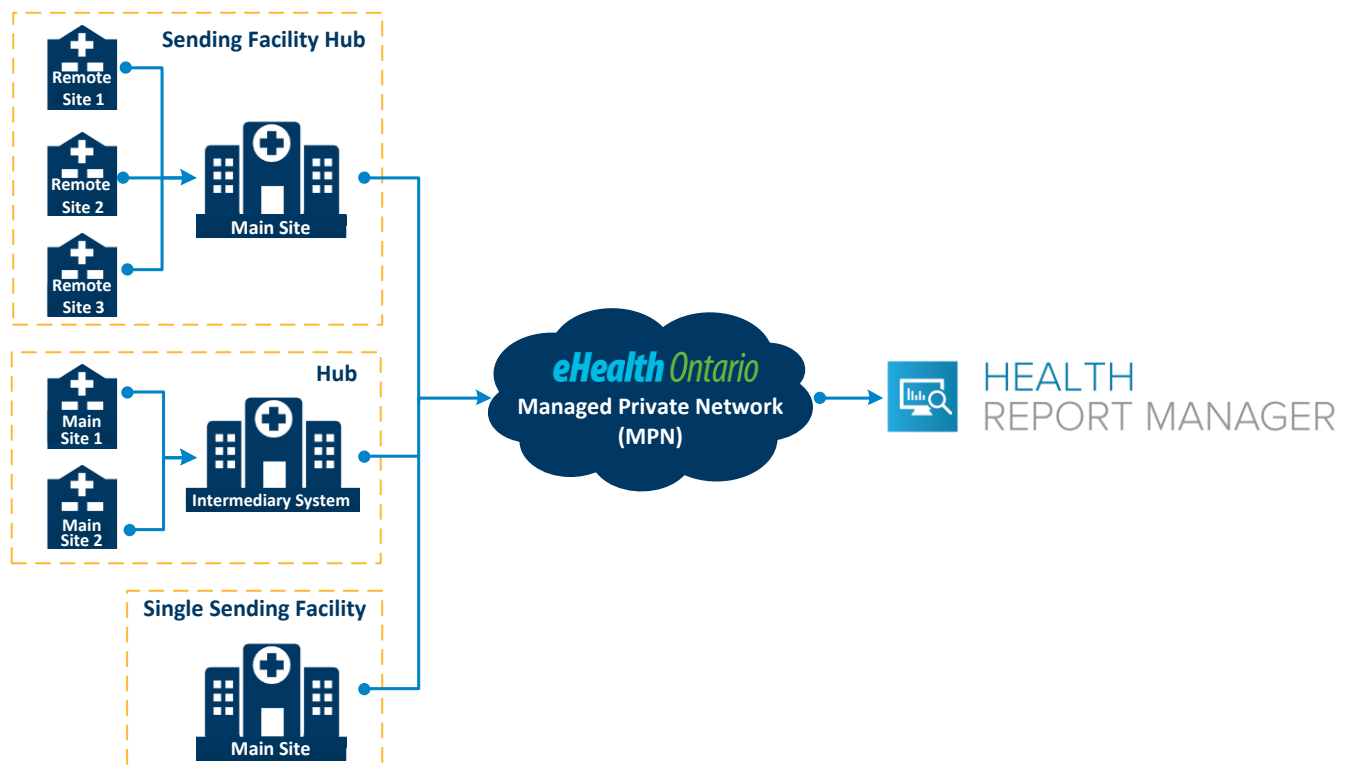
For more information about HRM, please visit the [OntarioMD website](#).

## 2. Technical Overview

Update: Request connectivity details from eHealth

### 2.1. Background

HRM is typically deployed in two possible configurations. The single facility direct connection or the hub and spoke model. In both cases there is a single connection to the HRM solution from the SF's main site to dedicated HRM ports.



#### Connectivity Requirements

OntarioMD Maintains two separate environments utilized for SF integrations. Connectivity to HRM is provisioned through dedicated SF ports within the HRM solution. It is highly recommended that SF maintain a separation between their testing and production systems to ensure no cross contamination occurs.

#### 2.1.1. HRM Testing Environment (UAT)

- Non-PHI
- **Address:** <https://wsgateway.pst.ehealthontario.ca:9443/API/FHIR/HRM/omduat>

#### 2.1.2. HRM Production Environment

- **Address:** <https://wsgateway.prod.ehealthontario.ca:9443/API/FHIR/HRM/v1>

## 3. Scope of Data

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### 3.1. Scope of Data

The HRM solution supports text-based Medical Record (MR) and Diagnostic Imaging (text only) reports.

*Examples include:*

Medical Records:	Diagnostic Imaging (text only):
Ambulatory Note	BMD Transcription
Consultation Note	Mammogram
Discharge Summary	CT Transcription
Emergency Department Reports	Radiology Transcription
Cardiovascular Reports	Respiratory Reports

An HL7 data feed containing these clinical data types as well as any other clinical observations that would be considered useful to clinicians should be transmitted to HRM.

### 3.2. Important Report Content

- **Connectivity** - UAT and PROD – Making sure the certificates are installed prior to testing and go-live. Site should test connection by sending a test message through to AIMS.
- **HTTP Headers** - Validate IHFProviderID (UPI )and ClientTxID during testing.
- **Medical Records** – Confirm which diagnostic category will be using. OTH (other) or PHY (Hx. Dx, admission note, etc.) are the only codes for MR.
- **LOINC Codes** – Every report must contain a valid LOINC code which should be the most specific code available related to the report content.
- **Diagnostic Report – EffectiveDateTime** is the Date/time that the observation was made or the Exam date.
- **Diagnostic Report – Issued Date** is the Date/time the report was transcribed.
- **Diagnostic Report - EffectiveDateTime and Encounter – Period – StartDate** can be the same value.



### 3.3. Workflow and Support Considerations

- Training between the vendor and clinical site should be completed prior to any go-live activities.
- Error Handling
  - Timeout or server related errors should be reprocessed automatically for a specific number of reattempts. (this should not be infinite, however, manual retrigger of these messages to restart the reattempts is acceptable).
  - Content related errors should never be automatically reprocessed as these require review and correction of the error prior to reprocessing.
- HRM will provide a successful acknowledgement when a message has been successfully accepted by the system. This is not a confirmation of delivery to the clinician EMR, nor is it a confirmation that recipients are HRM subscribers.
- Each contributor is required to maintain a provider dictionary to ensure that messages sent to HRM match valid subscribers to the service (based on College identifiers).
  - OntarioMD provides a “new user list” on a weekly basis to provide Clinician Subscriber updates which can be consumed. **Any non-delivered reports either due to a misidentified recipient or to a non HRM Subscriber is the responsibility of the sending facility.**
  - Clinicians who request to be deactivated from HRM are identified with the “new user list” and contributors are given a 2-week grace period, from time of the list publication, to update their provider dictionaries to remove the identified clinicians.

## 4. Message Structure

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### 4.1. Message Format

Faster Healthcare Interoperability Resources (FHIR®) is a standards framework developed by HL7. It is fast and easy to implement, and allows electronic health information systems to speak to one another. For the HRM Implementation, all messages are based on the FHIR DSTU2 v1.0.2 version. More information of FHIR® standards can be found [on their website](#).

### 4.2. HTTP Headers

#### 4.2.1. Outgoing (Sending)








To be sent as part of the outgoing message to HIAL/AIMS

Header	Description	Example
<b>ClientTxID</b>	This is the client transaction ID associated with the transmission to the AIMS service. There is no specific pattern or format requirements other than that this shall be unique per message sent.	0123-456
<b>IHFProviderID</b>	The organization specific UPI associated with the sending facility as provided by eHealth Ontario.	urn:ehealth:rid:upi:160078104934
<b>Content-Type</b>	All content shall follow FHIR standards for message content-type identification	application/json+fhir

#### 4.2.2. Return

Header	Description	Example
<b>hialTxID</b>	The HIAL associated transaction ID associated with the transmission of this message. This will be unique even if the message payload is the same.	360fb6f6-572a-410e-ab12-dd861b641de1

### 4.3. General Structure

	<b>Message Header</b>	The header for a message exchange that is either requesting or responding to an action.
	<b>Patient</b>	The patient resource captures demographics and other administrative information about the individual receiving care or other health-related services.
	<b>Diagnostic Order</b>	A Diagnostic Order is a record of a request for a set of diagnostic investigations to be performed.
	<b>Diagnostic Report</b>	The Diagnostic Report contains the findings and interpretation of diagnostic tests performed on patients. The report includes clinical context such as requesting and provider information, and some mix of atomic results, images, textual and coded interpretations, and formatted representation of diagnostic reports
	<b>Document Manifest</b>	The document manifest resource defines a set of documents.
	<b>Encounter</b>	An interaction between a patient and healthcare provider(s) for the purpose of providing healthcare service(s) or assessing the health status of a patient.
	<b>Practitioner</b>	A person who is directly or indirectly involved in the provisioning of healthcare.

## 5. Message Definitions

### 5.1. How to Read this Section

#### 5.1.1. Resource Tables

The following columns are found within each resource table:

- **Element Name:** Identifies the FHIR component
- **Cardinality (Card.):** Indicates the optionality of the field. The following values may be found:

Value	Description
R (1)	Required. A value must always be provided
0 (0..1)	Optional. Systems should transmit data in this field if they support it, but this is not required.
C	Conditionally required please see Description
CH	Choice of either field, however, at least one must be present.

- **Type:** Indicates the FHIR data type associated with this field
- **RP#:** Indicates whether the field may repeat, and if so, indicates the minimum and maximum number of repetitions
- **Len:** Maximum length of the field if one is defined.
- **Code Table#:** Indicates that there is a specific value or rule set applicable to the field. Please reference the associated Code table in the appendix for rules or acceptable values.
- **Description:** Contains a description of the field

#### 5.1.2. Data Type Tables

The following columns are found within each data type table:



**Element Name**

Identifies the data type



**Card.**


Indicates the cardinality of the field




**Type**

Indicates the FHIR data type associated with this field


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	<b>Len</b>	Indicates the maximum length of the field
---	------------	---

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	<b>Code Tbl#</b>	For components where a code is expected a table is referenced in Section 7 that outlines from which values the data must be drawn
---	----------------------	---

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	<b>Sample Data</b>	Shows an example of the data that may be found in this field
---	------------------------	--

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## 5.2. Bundle

The message bundle is the root of all messages to which all resources link up. The context specific resources are maintained under the entry-resource sub elements and are discussed as separate sections below.

Element Name	Card	Type	RP#	Len	Description	Sample Data
<b>Bundle</b>	R	DomainResource	-	-	Contains a collection of resources entry	
<b>id</b>	R	id	1	64	Unique Bundle ID	PKG1-UC1-2-1
<b>type</b>	R	Code	1	-	Bundle type. FIXED: message	message
<b>entry</b>	R	BackboneElement	7..*	-	Entry in the bundle - will have a resource, or information must be a resource unless there's a request or response	

```
{
  "resourceType": "Bundle",
  "id": "aad83f31-326d-4792-addb-3d40fedc6457",
  "type": "message",
  "entry": [
    {
      "resource": {
        "resourceType": "MessageHeader",
      }
    },
    {
      "resource": {
        "resourceType": "Patient",
      }
    }
  ]
}
```

### 5.2.1. entry

The entry element is a repeating element which can contain only a single resource element and subsequent FHIR resource structure below. The possible sub elements are constrained to HRM FHIR specific elements only. All sub elements must exist within the message at least once and full definitions can be found in subsequent sections of this document.

Element Name	Card	Type	RP#	Len	Description	Sample Data
<b>entry</b>		BackboneElement	7..*	-	Contains a collection of resources entry. The minimum number of repetitions is 7 with the expectation of at least 1 of each subelement	
<b>resource</b>	R	Resource	1	-	Entry in the bundle - will have a resource, or information must be a resource unless there's a request or response The minimum number of repetitions is 7 with the expectation of at least 1 of each subelement	resourceType:"MessageHeader"

### 5.2.2. resource

The resource element is the parent to all FHIR resources contained within the message bundle and must contain a minimum of 1 instance of each. The available FHIR resources are as follows:

ResourceTypes	RP#	Description
<b>MessageHeader</b>	1..1	Data related to the message exchange
<b>Patient</b>	1..1	Patient identification and demographic data.
<b>DiagnosticOrder</b>	1..1	Ordering information related to the report data contained within the message.
<b>DiagnosticReport</b>	1..1	Report related discrete data elements
<b>DocumentManifest</b>	1..1	Report related attachments. (can be text or binary but must be base64 encoded)
<b>Encounter</b>	1..1	Information related to the encounter or visit associated with the message.
<b>Practitioner</b>	1..*	Identification data related to clinicians referenced within the message, including recipients.

### 5.3. Message Header

MessageHeader is the header for a message exchange that is either requesting or responding to an action. The reference(s) that are the subject of the action as well as other information related to the action are typically transmitted in a bundle in which the MessageHeader resource instance is the first resource in the bundle. The tables below define the various data elements that should be provided within the Message Header.

Element Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>MessageHeader</b>						A resource that describes a message that is exchanged between systems	
<b>id</b>	R	Id	1	64	-	Unique Message Header ID. This is utilized as the Message Control ID and will be used as the identifier in the message response	aad83f31-326d-4792-addb-3d40fedc6457
<b>timestamp</b>	R	instant	1	-	<a href="#">0021</a>	Time that the message was sent from the originating system to HRM.	2017-01-09T11:36:55-05:00
<b>event</b>	R	Coding	1	-	-	Code for the event this message represents	
<b>source</b>	R	BackboneElement	1	-	-	Message Source Application	
<b>destination</b>	R	BackboneElement	1	-	-	Message Destination Application(s)	



```

{
  "resource": {
    "resourceType": "MessageHeader",
    "id": "aad83f31-326d-4792-addb-3d40fedc6457",
    "timestamp": "2017-01-18T15:13:30.121-05:00",
    "event": {
      "system": "http://hl7.org/fhir/message-events",
      "code": "diagnosticreport-provide"
    },
    "source": {
      "name": "0123456789",
      "endpoint": "http://10.10.10.10:12345"
    },
    "destination": [
      {
        "name": "9876543210",
        "endpoint": "http://www.SFHub.com/HUBInterface"
      }
    ]
  }
},
}

```

### 5.3.1. event.coding

This field must contain the code for the event this message represents. For HRM purposes only “diagnosticreport-provide” events should be sent for report delivery.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>event.coding</b>	R	Element					
<b>system</b>	R	uri	1	-	-	Code system used for the event coding. <b>This is a fixed value.</b>	http://hl7.org/fhir/message-events
<b>code</b>	R	code	1	-	<u>0001</u>	Message event code as referenced for the system. HRM currently only supports a single value of diagnosticreport-provide currently.	diagnosticreport-provide

### 5.3.2. source

The sending facility for HRM is the legal HSP that takes full responsibility for sending the message. The source for this unique identifier is the Provider Registry number assigned to your facility by eHealth Ontario.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>source</b>	R	Element					
<b>name</b>	R	string	1	12	-	UPI identifier for the original system of the message	1234567890
<b>endpoint</b>	R	uri	1	-	-	URL endpoint for the source of the message	http://10.10.10.10:12345 OR http://www.sendingfacility.com/HIS

### 5.3.3. destination

The purpose of this segment is to denote the intermediary system and destination application which the message is intended. OntarioMD will inform your sending facility what to populate this field with.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>destination</b>	R	Element					
<b>name</b>	R	string	1	12	-	UPI identifier for the system this message was original sent too. This can be either an intermediate system (HUB) or directly to HRM.	1234567890 OR HRM
<b>endpoint</b>	R	uri	1	-	-	URL endpoint for the destination.	<a href="http://www.SFHub.com/HubInterface">http://www.SFHub.com/HubInterface</a> OR should we remove? In which scenario will this endpoint will be used? <a href="http://www.ontariomd.com/HRM">http://www.ontariomd.com/HRM</a>

## 5.4. Patient

The patient resource captures demographics and other administrative information about an individual receiving care or other health-related services.

Element Name	Card	Type	RP#	Len	Code tbl#	Description	Sample Data
<b>Patient</b>		DomainResource					
<b>id</b>	R	Id	1	-	-	Internal identifier used within the message as a reference to other resources. This must be unique per resource type.	Patient001
<b>identifier</b>	R	Identifier	1..2	-	-	An identifier(s) for this patient	
<b>name</b>	R	HumanName	1	-	-	A name associated with the individual.	
<b>telecom</b>	O	ContactPoint	0..5	-	-	A telephone number by which the individual may be contacted	
<b>gender</b>	R	code	1	-	<a href="#">0006</a>	The gender that the patient is considered to have for administration and record keeping purposes	Male
<b>birthDate</b>	R	date	1	-	-	The date of birth for the individual	1945-11-11
<b>deceasedBoolean</b>		boolean	1	-	-	Indicates if the individual is deceased or not	false
<b>deceasedDateTime</b>	CH	dateTime	1	-	<a href="#">0021</a>	To be included if the patient is deceased and the date/time of death is known.	2017-01-01T12:34:56-05:00
<b>address</b>	O	Address	0..1	-	-	Home address for the individual	

```

{
  "resource": {
    "resourceType": "Patient",
    "id": "Patient001",
    "identifier": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/v2/0203",
              "code": "MR"
            }
          ]
        },
        "value": "ABC123"
      },
      {
        "extension": [
          {
            "url": "http://ehealthontario.ca/API/fhir/StructureDefinition/ext-hcn-version-code",
            "valueString": "AB"
          }
        ],
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/v2/0203",
              "code": "JHN"
            }
          ]
        },
        "system": "http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-patient-hcn",
        "value": "1234567890"
      }
    ],
    "name": [
      {
        "family": [
          "Smith"
        ],
        "given": [
          "John"
        ]
      }
    ],
    "telecom": [
      {
        "system": "phone",
        "value": "416-555-5555",
        "use": "home",
        "rank": 1
      }
    ],
    "gender": "male",
    "birthDate": "1945-11-11",
    "deceasedBoolean": false,
    "address": [
      {
        "use": "home",
        "line": [
          "123 Somewhere St",
          "Suite 104"
        ],
        "city": "Toronto",
        "state": "ON",
        "postalCode": "M5S3C1",
        "country": "CAN"
      }
    ]
  }
},

```

### 5.4.1. Identifier

This field must contain at least one repetition identifying the patient. These repetitions must follow these rules:

- All messages must contain at least one repetition patient identifier with an identifier type code of MR (MRN).
- A provincial health number (e.g. OHIP number or other province health card number) must also be sent provided the patient has one.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>identifier</b>		Element					
<b>extension</b>	O	extension	1	-	-	Extension used to contain the HCN Version code should one be necessary.	
<b>type</b>	R	coding	1	-	-	Categorization of the type of identifier being presented such as an MRN or HCN.	
<b>system</b>	C	URI	0..1	-	<a href="#">0020</a>	Only present for Health Card Numbers (JHN Type) URI reference to the system in which value was assigned. This is typically used to specify the URI for the associated Health Ministry such as OHIP	<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-patient-hcn">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-patient-hcn</a>
<b>value</b>	R	string	1	20	-	Actual identifier value such as the MRN or HCN number. (HCN Version code should not be present here)	MR01234 or 1234567897

### 5.4.2. identifier.extension

This component must contain the check digit for the identifier, if one exists. If the identifier is an OHIP number, this field must contain the version code, if one is present.

Name	Card.	Type	RP #	Len	Code Tbl#	Description	Sample Data
<b>extension</b>	O	Element	1	-	-		
<b>url</b>	R	uri	1	-	-	URI associated with the extension use. In this case this is a hardcoded value. <b>This is a FIXED value.</b>	<a href="http://ehealthontario.ca/API/fhir/StructureDefinition/ext-identifier-hcn-version-code">http://ehealthontario.ca/API/fhir/StructureDefinition/ext-identifier-hcn-version-code</a>
<b>valueString</b>	R	string	1	1..2	-	Health Card Number version code.	AB

### 5.4.2.1. identifier.type.coding

The Identifier Type and subsequent coding element are designed to provide categorization of the type of identifier being provided such as a Jurisdictional Health Card Number such as OHIP or an internal facility Medical Record Number.

Name	Card.	Type	RP#	Len	Description	Sample Data
<b>type.coding</b>						
<b>system</b>	R	reference	1	-	URI reference to the coding system being used in the code element.	<a href="http://hl7.org/fhir/v2/0203">http://hl7.org/fhir/v2/0203</a>
<b>code</b>	R	string	1	-	Specific code to be used within the coding system identified. <b>For the Patient Identifier, this value should be either JHN or MR based on usage.</b>	JHN or MR

**Code:** This component must identify which type of identifier this field repetition contains. For HRM purposes the following identifier types should be provided:

- MR** = Medical Record Number
- JHN** = Health Card Number.

### 5.4.3. name

This component must contain the patient's name. For HRM purposes the clinicians are expecting to receive the patient's legal name.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>name</b>		Element					
<b>family</b>	R	String	1	50	-	Patient's last name	Smith
<b>given</b>	R	String	1	50	-	Patient's first name	John

### 5.4.4. telecom

While the telecom element itself is optional, it should be noted that if the element itself is present. All sub elements are required.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>telecom</b>		Element					
<b>system</b>	R	Code	1	-	<a href="#">0004</a>	Telecommunications form for contact point	phone
<b>value</b>	R	String	1	-	-	Actual contact value	(416)555-1234
<b>use</b>	R	Code	1	-	<a href="#">0005</a>	Purpose of this contact method.	home
<b>rank</b>	O	PositiveInt	1	-	-	Specify preferred order of use (1 = highest) for all telecom methods.	1

### 5.4.5. gender

This field must contain the gender that the patient is considered to have for administration and record keeping purposes.

Values for administrative sex should be drawn from the following list: male | female | other | unknown

### 5.4.6. birthDate

This field must contain the date/time of birth of the patient. This is a required field for HRM purposes.

### 5.4.7. deceasedBoolean

This field indicates whether the individual is deceased or not. Valid values include true or false. This element should only be present if the deceasedDateTime element is absent.

### 5.4.8. deceasedDateTime

If recorded in the sending system, this field must contain the date and time of the patient's death with as much precision as is known. This element should only be present if the deceasedboolean element is absent.

### 5.4.9. address

This component must contain the patient's home address.

Name	Card	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>address</b>		Element					
<b>Use</b>	R	Code	1	-	<a href="#">0007</a>	The Purpose of this address	Home
<b>Line</b>	O	String	0..3	50	-	Should include street name, number, direction & P.O. Box etc.	1 First Avenue
<b>City</b>	O	String	0..1	80	-	Identifies the name of city, town etc.	North York
<b>State</b>	O	String	0..1	2	<a href="#">0016</a>	Identifies the sub-unit of country.	ON
<b>postalCode</b>	O	String	0..1	10	<a href="#">0021</a>	Includes the postal code or ZIP code (include ZIP+4) for the address. Please see code table for validation rules.)	M3C4M5
<b>country</b>	O	string	0..1	3	<a href="#">0018</a>	Subset of Country designations as per ISO-3166-1 Alpha-3 standard.	CAN

## 5.5. DiagnosticOrder

The Diagnostic Order resource outlines the request for a diagnostic service and will including identifying information associated with the request.

Element Name	Card	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>DiagnosticOrder</b>		DomainResource					
<b>id</b>	R	Id	1	64	-	Internal identifier used within the message as a reference to other resources. This must be unique per resource type.	Order001
<b>orderer</b>	R	Reference	1	-	-	The practitioner that holds legal responsibility for ordering the investigation	
<b>identifier</b>	O	Identifier	1	-	-	Identifiers assigned to this order instance by the orderer and/or the receiver and/or order fulfiller	

```
{
  "resource": {
    "resourceType": "DiagnosticOrder",
    "id": "Order001",
    "orderer": {
      "reference": "Practitioner/DR001",
      "display": "Dr Jonah Jameson"
    },
    "identifier": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/identifier-type",
              "code": "PLAC"
            }
          ]
        },
        "value": "PLAC01234"
      }
    ]
  }
}
```



### 5.5.1. orderer

This field contains the identity of the provider who ordered this result, if applicable. This component includes the reference ID used within the Practitioner resource to identify the correct practitioner to retrieve additional details regarding the clinician (e.g., first and last name).

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>order</b>							
reference	R	string	1	-	-	A reference to the Practitioner resource that holds legal responsibility for ordering the investigation.	Practitioner/DR001
display	O	string	1	-	-	Optional plain text representation of the ordering practitioner.	Dr John Smith

### 5.5.2. identifier

This field contains the requisition identifier; the identifier associated with the person or service that requests or places an order.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>identifier</b>		Element					
type.coding	R	coding	1	-	-	Identifier type coding	
value	R	string	1	50	-	Diagnostic order number associated with this request as generated by the source information system.	PLAC01234

#### 5.5.2.1. identifier.type.coding

The Identifier Type and subsequent coding element are designed to provide categorization of the type of identifier being provided such as a Jurisdictional Health Card Number such as OHIP or an internal facility Medical Record Number.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>type.coding</b>							
system	R	reference	1	-	-	<b>FIXED VALUE:</b> URI reference to the coding system being used in the code element.	<a href="http://hl7.org/fhir/identifier-type">http://hl7.org/fhir/identifier-type</a>
code	R	string	1	-	-	Specific code to be used within the coding system identified. <b>This is a FIXED value for the diagnosticOrder resource</b>	PLAC

## 5.6. DiagnosticReport

The Diagnostic Report contains the findings and interpretation of diagnostic tests performed on patients. The report includes clinical context such as requesting and provider information, and some mix of atomic results, textual and coded interpretations, and formatted representation of diagnostic reports

Element Name	Card	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>DiagnosticReport</b>		DomainResource					
<b>id</b>	R	Id	1	64	-	Internal identifier used within the message as a reference to other resources. This must be unique per resource type	Report001
<b>extension</b>	C	Extension	1	-	-	Optional extension field to specify urgency of this report	
<b>identifier</b>	R	Identifier	1	-	-	The local ID assigned to the report by the order filler, usually by the Information System of the diagnostic service provider	
<b>status</b>	R	code	1	-	<a href="#">0009</a>	The status of the diagnostic report as a whole	final
<b>category</b>	R	CodeableConcept	1	-	<a href="#">0010</a>	A code that classifies the clinical discipline, department or diagnostic service that created the report	
<b>code</b>	R	CodeableConcept	1	-	-	Name/Code for this diagnostic report as presented within the LOINC code system.	
<b>effectiveDateTime</b>	R	dateTime	1	-	<a href="#">0021</a>	The time the observed values are valid from. (Date/time that the observations were made)	2017-01-01T01:23:45-05:00
<b>issued</b>	R	Instant	1	-	<a href="#">0021</a>	The date and time that this version of the report was released from the source diagnostic service.	2017-01-02T12:23:45-05:00
<b>performer</b>	R	Reference	1	-	-	The Clinician responsible for the diagnostic content of this report.	
<b>request</b>	R	Reference	1	-	-	Reference to the diagnosticOrder details associated with this report.	DiagnosticOrder/Order001
<b>conclusion</b>	O	String	0..1	-	-	Concise and clinically contextualized narrative interpretation of the diagnostic report including diagnosis information.	Elevated LDL
<b>codedDiagnosis</b>	O	CodeableConcept	0...10	-	-	SNOMED-CT representation of diagnosis information related to the report.	

```

{
  "resource": {
    "resourceType": "DiagnosticReport",
    "id": "Report001",
    "extension": [
      {
        "url": "http://ehealthontario.ca/API/fhir/StructureDefinition/ext-hrm-diagnosticReport-urgency-flag",
        "valueBoolean": true
      }
    ],
    "identifier": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/identifier-type",
              "code": "FILL"
            }
          ]
        },
        "value": "FILL01234"
      }
    ],
    "status": "corrected",
    "category": {
      "coding": [
        {
          "system": "http://hl7.org/fhir/v2/0074",
          "code": "RAD"
        }
      ]
    },
    "code": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "10191-5"
        }
      ]
    },
    "effectiveDateTime": "2017-01-18T15:13:30-05:00",
    "issued": "2017-01-18T15:13:30.121-05:00",
    "performer": {
      "reference": "Practitioner/DR001"
    },
    "request": {
      "reference": "DiagnosticOrder/Order001"
    },
    "conclusion": "Elevated LDL",
    "codedDiagnosis": [
      {
        "coding": [
          {
            "system": "http://snomed.info/sct",
            "code": "447139008"
          }
        ]
      }
    ]
  }
}

```

### 5.6.1. extension

This component is utilized to designate the urgency of the report attached. This element should only be included if the Urgency flag is set to TRUE.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>extension</b>		Element					
<b>url</b>	R	uri	1	-	-	<b>FIXED VALUE:</b> URI associated with the extension use. In this case this is a hardcoded value.	http://ehealthontario.ca/API/fhir/StructureDefinition/ext-hrm-diagnosticReport-urgency-flag
<b>valueBoolean</b>	R	boolean	1	-	-	Urgency Flag Boolean value.	true

### 5.6.2. identifier

This field contains the report identifier; the identifier associated with the diagnostic report generated by the source system.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>identifier</b>		Element					
<b>type.coding</b>	R	coding	1	-	-	Identifier type coding	
<b>value</b>	R	string	1	50	-	Diagnostic order number associated with this request and generated by the source system for the report.	FILL01234

#### 5.6.2.1. identifier.type.coding

The Identifier Type and subsequent coding element are designed to provide categorization of the type of identifier being provided such as a Jurisdictional Health Card Number such as OHIP or an internal facility Medical Record Number.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>type.coding</b>							
<b>system</b>	R	reference	1	-	-	URI reference to the coding system being used in the code element. <b>This is a fixed value</b>	http://hl7.org/fhir/identifier-type
<b>code</b>	R	string	1	-	-	Specific code to be used within the coding system identified. <b>This is a fixed value for the diagnosticReport resource.</b>	FILL

### 5.6.3. status

A required field that indicates the current completion state of the document / result. This field must contain one of the following values which will be translated to the following for EMR vendors:

### 5.6.4. category.coding

Category enables contributors to provide granular content to HRM to specify key details about Diagnostic Imaging/Diagnostic Tests (DI) where there may be one or more modalities and their corresponding procedure(s) reported.

For HRM Only: This information is passed on to the recipient EMRs to assist them in categorizing reports received from the hospital or specialty clinic.

Name	Card	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>category.coding</b>		Element					
<b>system</b>	R	uri	1	-	-	URI reference to the coding system being used in the code element.	<a href="http://hl7.org/fhir/v2/0074">http://hl7.org/fhir/v2/0074</a>
<b>code</b>	R	code	1	3	<a href="#">0010</a>	Specific code to be used within the coding system identified.	RAD

### 5.6.5. code.coding

This field represents the mnemonic/abbreviation for the report type.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>code.coding</b>							
<b>system</b>	R	uri	1	-	-	URI reference to the coding system being used in the code element.	<a href="http://loinc.org">http://loinc.org</a>
<b>code</b>	R	code	1	-	-	Specific code to be used within the coding system identified.	10191-5

### 5.6.6. effectiveDateTime

This field contains the most relevant date/time for reports and observations.

For Medical Record Reports Types (e.g. Consult Reports), it contains the dictated date/time. If a Medical Record report is being corrected, it contains the time that the document was last corrected.

For diagnostic images, it contains the dates and times of when the observations were taken, and corresponds directly with the procedures and sub-procedures listed within the category and code fields.

### 5.6.7. issued

This field indicates the date and time that this version of the report was released from the source diagnostic service.

### 5.6.8. performer

This field must contain the identity of the attending doctor for the patient visit, if appropriate and available. To capture the clinician this component should include the clinicians CPSO or CNO number

and reference the Practitioner resource for additional details regarding the attending doctor (e.g., first and last name). For example:

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>performer</b>							
reference	R	string	1	-	-	A reference to the Practitioner resource that holds legal responsibility for performing the investigation.	Practitioner/DR001
display	O	string	0..1	-	-	Optional plain text representation of the assigning authority.	Dr John Smith

### 5.6.9. request

Reference to the Diagnostic Order that this report fulfills

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>request</b>							
reference	R	string	1	-	-	A reference to the Practitioner resource that holds legal responsibility for performing the investigation.	diagnosticOrder/Order001

### 5.6.10. conclusion

The conclusion should capture a concise and clinically contextualized narrative interpretation of the diagnostic report.

### 5.6.11. codedDiagnosis.coding

The SNOMED-CT Canadian Edition represented diagnostic code associated with the enclosed report. This is the Canada Health Infoway curated version which includes the Canadian extension added to the SNOMED-CT International Edition.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>coding</b>		Element					
system	R	uri	1	-	-	URI reference to the coding system being used in the code element.	<a href="http://snomed.info/sct">http://snomed.info/sct</a>
code	R	code	1	-	-	Specific code to be used within the coding system identified.	447139008

## 5.7. DocumentManifest

The document manifest resource defines a set of documents.

Element Name	Card	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>DocumentManifest</b>							
<b>id</b>	R	Id	1	-	-	Internal identifier used within the message as a reference to other resources. This must be unique per resource type.	Document001
<b>recipient</b>	R	Reference	1...25	-	-	A practitioner for which this set of documents is intended	
<b>author</b>	R	Reference	1	-	-	Identifies who is responsible for creating the manifest, and adding documents to it	
<b>status</b>	R	Code	1		<a href="#">0015</a>	The status of this document manifest	current
<b>content</b>	R	Content	1		-	Document content attachments related to this message.	
<b>related</b>	R	Reference	1		-	Reference to the corresponding DiagnosticReport associated with this document.	

```

{
  "resource": {
    "resourceType": "DocumentManifest",
    "id": "Document001",
    "recipient": [
      {
        "reference": "Practitioner/DR001"
      },
      {
        "reference": "Practitioner/DR002"
      }
    ],
    "author": [
      {
        "reference": "Practitioner/DR001"
      }
    ],
    "status": "current",
    "content": [
      {
        "pAttachment": {
          "contentType": "application/pdf",
          "language": "en",
          "data": "TWVzc2FnZSBTdWJjZXRhZnVsbHkgRGVjb2RlZA==",
          "title": "Patients LDL Report",
          "creation": "2017-01-18T15:13:30-05:00"
        }
      }
    ],
    "related": [
      {
        "ref": {
          "reference": "diagnosticReport/Report001"
        }
      }
    ]
  }
}

```

### 5.7.1. recipient

This field contains information designating the specific recipients of electronic reports. To capture the report recipients this component should include the clinician's ID number assigned within the Practitioner resource which will include additional details regarding the recipient (e.g., first and last name).

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>recipient</b>							
<b>reference</b>	R	string	1	-	-	A reference to the Practitioner resource that holds legal responsibility for performing the investigation.	Practitioner/DR001
<b>display</b>	O	string	0..1	-	-	Optional plain text representation of the assigning authority.	Dr John Smith

### 5.7.2. Author

Identifies who is responsible for creating the manifest, and adding documents to it

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>author</b>							
<b>reference</b>	R	string	1	-	-	A reference to the Practitioner resource that holds legal responsibility for performing the investigation.	Practitioner/DR002
<b>display</b>	O	string	0..1	-	-	Optional plain text representation of the assigning authority.	Dr Bob Doe

### 5.7.3. status

The status of this document manifest as represented in Code Table 0015

### 5.7.4. content.pAttachment

This field contains the value or text of the patient-related observation or documents.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>content.pAttachment</b>		Element					
<b>contentType</b>	R	Code	1	-	<a href="#">0019</a>	MIME type associated with the base64 encoded data based on RFC 4648	application/pdf
<b>language</b>	O	Code	0..1	-	-	ISO 639-1 representation of the language in which the document was written. <b>Currently only English and French are supported.</b>	en Or fr
<b>data</b>	R	Base64Binary	1	-	-	Base64 encoded binary of the report content that has been attached within the message as per <b>RFC 4648</b>	



<b>title</b>	O	String	0..1	-	-	Title for the attached document.	X-ray right leg
<b>creation</b>	R	dateTime	1	-	<a href="#">0021</a>	Date that the attachment was created	2017-01-01T00:00:00-05:00

### Transmitting Binary Contents (Scanned Images, PDFs, etc.)

The CDR supports the storage of binary attachments as a part of a document. This may serve several purposes (the following list is only to provide examples; it is not an exclusive list):

- A PDF document or Microsoft Word document may be transmitted which contains the entire contents of a report
- An image file can be transmitted which supplements the contents of a report
- A diagram can be transmitted which explains a portion of a report
- A sound file can be transmitted which provides interpretation
- An HTML document can be transmitted which contains the body of a report

Binary content is transmitted using the encapsulated data (ED) HL7 data type. To be transmitted in an FHIR message, binary contents must be Base 64 encoded. See the following URL for a description of Base 64 encoding: <http://en.wikipedia.org/wiki/Base64>

### 5.7.5. related.ref

Reference to the diagnostic report resource that this attachment is related too.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>related.ref</b>		Element					
<b>reference</b>	R	String	1	-	-	Reference to the diagnostic report that this attachment documents.	DiagnosticReport/Report001

## 5.8. Encounter

The Encounter resource describes an interaction between a patient and healthcare provider(s) for the purpose of providing healthcare service(s) or assessing the health status of a patient.

Element Name	Card	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>Encounter</b>							
<b>id</b>	R	Id	1	-	-	Internal identifier used within the message as a reference to other resources. This must be unique per resource type.	Visit001
<b>identifier</b>	R	Identifier	1	-	-	Identifier(s) by which this encounter is known. Visit Number.	
<b>status</b>	R	Code	1	-	<a href="#">0011</a>	Current state or status of the encounter	finished
<b>class</b>	R	Code	1	-	<a href="#">0012</a>		outpatient
<b>period</b>	R	Period	1	-	-	The start and end time of the encounter	

```
{
  "resource": {
    "resourceType": "Encounter",
    "id": "Visit001",
    "identifier": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/v2/0203",
              "code": "VN"
            }
          ]
        },
        "value": "VN43210"
      }
    ],
    "status": "finished",
    "class": "outpatient",
    "period": {
      "start": "2017-01-01T08:34:56.789-05:00",
      "end": "2017-01-02T12:34:56.789-05:00"
    }
  }
},
```

### 5.8.1. identifier

This field contains the requisition identifier; the identifier associated with the encounter or visit.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>Identifier</b>		Element					
<b>type.coding</b>	R	coding	1	-	-	Identifier type coding	
<b>value</b>	R	string	1	50	-	Visit or encounter number associated with this request and generated by the source report system.	VN43210

#### 5.8.1.1. identifier.type.coding

The Identifier Type and subsequent coding element are designed to provide categorization of the type of identifier being provided such as a Jurisdictional Health Card Number such as OHIP or an internal facility Medical Record Number.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>type.coding</b>							
<b>system</b>	R	reference	1	-	-	URI reference to the coding system being used in the code element.	http://hl7.org/fhir/v2/0203
<b>code</b>	R	string	1	-	-	Specific code to be used within the coding system identified. For the Encounter resource this is fixed to VN	VN

### 5.8.2. status

The status component defines the state of the encounter. The valid values for this element can be found in **Code Table 0011**.

For the majority of HRM reports the encounter status is expected to be finished.

### 5.8.3. class

This component should contain the classification of the encounter. The valid values for this element can be found in **Code Table 0012**.

### 5.8.4. period

This component includes the start and end time of the encounter. The end time will be considered the discharge date and time.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>period</b>							
<b>start</b>	O	dateTime	0..1	-	<a href="#">0021</a>	Admit DateTime of the encounter	2017-01-01T08:34:56-05:00
<b>end</b>	R	dateTime	1	-	<a href="#">0021</a>	Discharge DateTime of the encounter	2017-01-02T12:34:56-05:00

## 5.9. Practitioner

A person who is directly or indirectly involved in the provisioning of healthcare.

Element Name	Card	Type	RP#	Len	RP#	Description	Sample Data
<b>Practitioner</b>							
<b>id</b>	R	Id	1	64	-	Unique Identifier for the practitioner resource within the FHIR construct (NOT the CPSO/CNO identifier)	DR001
<b>identifier</b>	R	Identifier	1	-	-	Identifier construct to contain the Clinician's college issued identifier	
<b>name</b>	R	HumanName	1	-	-	Clinician's First/Last Name	

```

{
  "resource": {
    "resourceType": "Practitioner",
    "id": "DR001",
    "identifier": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/v2/0203",
              "code": "MD"
            }
          ]
        },
        "system": "http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-license-physician",
        "value": "12345"
      }
    ],
    "name": {
      "family": [
        "Jameson"
      ],
      "given": [
        "Jonah"
      ]
    }
  }
}

```

### 5.9.1. identifier

This field contains the requisition identifier; the identifier associated with the encounter or visit.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>identifier</b>		Element					
<b>type.coding</b>	R	coding	1	-	-	Identifier type coding	
<b>system</b>	R	URI	1	-	<a href="http://hl7.org/fhir/v2/0203">0017</a>	URI associated with the regulatory body the practitioner is authorized by	http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-license-physician
<b>value</b>	R	string	1	50	-	The College specific (CPSO/CNO) numerical identifier associated with the clinician.	12345

### 5.9.1.1. identifier.type.coding

The Identifier Type and subsequent coding element are designed to provide categorization of the type of identifier being provided such as a Jurisdictional Health Card Number such as OHIP or an internal facility Medical Record Number.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>type.coding</b>							
<b>system</b>	R	reference	1	-	-	URI reference to the coding system being used in the code element. <b>This is a fixed value</b>	<a href="http://hl7.org/fhir/v2/0203">http://hl7.org/fhir/v2/0203</a>
<b>code</b>	R	string	1	-	-	Specific code to be used within the coding system identified. <b>For the Practitioner resource, this should be either MD or NP</b>	MD or NP

### 5.9.2. name

This component must contain the practitioner's name.

Element Name	Card	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>name</b>							
<b>family</b>	R	String	1	50	-	Clinician's Last Name	Smith
<b>given</b>	R	String	1	50	-	Clinician's First Name	John

## 6. Response Messages

### 6.1. Bundle

The message bundle is the root of all messages to which all resources link up.

Name	Card	Type	RP#	Len	Description	Sample Data
<b>Bundle</b>	R	DomainResource	-	-	Contains a collection of resources entry	
<b>id</b>	R	id	1	64	Unique Bundle ID	42128718-5199-42d0-8ad2-90623ef534d3
<b>type</b>	R	Coding	1	-	Bundle type. Default: message	message
<b>entry</b>	R	BackboneElement	1	-	Entry in the bundle - will have a resource, or information must be a resource unless there's a request or response	

```
{
  "resourceType": "Bundle",
  "id": "76634ca5-9949-4e14-adbe-f81479d1002d",
  "type": "message",
  "entry": [
    {
      "resource": {
        "resourceType": "MessageHeader",
        "id": "3561",
        "timestamp": "2017-05-19T15:45:15.371-04:00",
        "event": {
          "system": "http://hl7.org/fhir/message-events",
          "code": "diagnosticreport-provide"
        },
        "response": {
          "identifier": "aad83f31-326d-4792-addb-3d40fedc6457",
          "code": "ok",
          "details": {"reference": "OperationOutcome/9ffc4f11-e96f-49e5-a765-6776eaa1d115"}
        },
        "source": {
          "name": "HRM",
          "endpoint": "http://www.ontariomd.com/HRM"
        },
        "destination": [
          {
            "name": "9876543210",
            "target": {"display": "0123456789"},
            "endpoint": "http://www.SFHub.com/HUBInterface"
          }
        ]
      }
    },
    {
      "resource": {
        "resourceType": "OperationOutcome",
        "id": "9ffc4f11-e96f-49e5-a765-6776eaa1d115",
        "issue": [
          {
            "severity": "information",
            "code": "informational",
            "details": {"text": "Successfully connected to AIMS Web Services!"}
          }
        ]
      }
    }
  ]
}
```

### 6.1.1. entry

The entry element is a repeating element which can contain only a single resource element and subsequent FHIR resource structure below. The possible sub elements are constrained to HRM FHIR specific elements only. All sub elements must exist within the message at least once and full definitions can be found in subsequent sections of this document.

Element Name	Card	Type	RP#	Len	Description	Sample Data
<b>entry</b>		DomainResource	1	-	Contains a collection of resources entry. The minimum number of repetitions is 7 with the expectation of at least 1 of each subelement	
<b>resource</b>	R	Resource	2	-	Entry in the bundle - will have a resource, or information must be a resource unless there's a request or response The message response will always consist of 2 resources.	"resourceType":"MessageHeader"

### 6.1.2. resource

The resource element is the parent to all FHIR resources contained within the message bundle and must contain a minimum of 1 instance of each. The available FHIR resources are as follows:

ResourceTypes	RP#	Description
<b>MessageHeader</b>	1..1	Data related to the message exchange
<b>OperationOutcome</b>	1..1	Operation ACK or NACK response details including error details (if applicable).

## 6.2. Message Header

MessageHeader is the header for a message exchange that is either requesting or responding to an action. The reference(s) that are the subject of the action as well as other information related to the action are typically transmitted in a bundle in which the MessageHeader resource instance is the first resource in the bundle. The tables below define the various data elements that should be provided within the Message Header.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>MessageHeader</b>						A resource that describes a message that is exchanged between systems	
<b>id</b>	R	Id	1	64	-	Unique Message Header ID. This is utilized as the Message Control ID and will be used as the identifier in the message response	297
<b>timestamp</b>	R	instant	1	-	<a href="#">0021</a>	Time that the message was sent from the originating system to HRM.	2017-01-09T11:36:55-05:00
<b>event</b>	R	Coding	1	-	-	Code for the event this message represents	
<b>response</b>	R	BackboneElement	1	-	-	The response details as references from the original message sent and referenced to the operation outcome	
<b>source</b>	R	BackboneElement	1	-	-	Message Source Application	
<b>destination</b>	R	BackboneElement	1	-	-	Message Destination Application(s)	

```

{
  "resource": {
    "resourceType": "MessageHeader",
    "id": "3561",
    "timestamp": "2017-05-19T15:45:15.371-04:00",
    "event": {
      "system": "http://hl7.org/fhir/message-events",
      "code": "diagnosticreport-provide"
    },
    "response": {
      "identifier": "aad83f31-326d-4792-addb-3d40fedc6457",
      "code": "ok",
      "details": {"reference": "OperationOutcome/9ffc4f11-e96f-49e5-a765-6776eaa1d115"}
    },
    "source": {
      "name": "HRM",
      "endpoint": "http://www.ontariomd.com/HRM"
    },
    "destination": [
      {
        "name": "9876543210",
        "target": {"display": "0123456789"},
        "endpoint": "http://www.SFHub.com/HUBInterface"
      }
    ]
  }
}

```



### 6.2.1. id

Message unique identifier for this resource. In the case of the message header, this id is utilized as the message control ID that will be included within the message response.

### 6.2.2. timestamp

This field must contain the date/time the message was created, including GMT offset such as:  
2017-01-09T11:36:55-05:00

### 6.2.3. event.coding

This field must contain the code for the event this message represents. For HRM purposes only “diagnosticreport-provide” events should be sent for report delivery.

Name	Card.	Type	RP#	Len	Code Tbl#	Sample Data
<b>event.coding</b>	R	Element		-		
<b>system</b>	R	uri	1	-	-	http://hl7.org/fhir/message-events
<b>code</b>	R	code	1	-	<u>0001</u>	diagnosticreport-provide

### 6.2.4. response

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>response</b>	R			-			
<b>identifier</b>	R	id	1	1..64	-	Reference to the original messages ID within the MessageHeader resource.	aad83f31-326d-4792-addb-3d40fedc6457
<b>code</b>	R	code	1	-	<u>0022</u>	Response type	ok
<b>details</b>	R	Reference	1	-	-	Reference to the OperationOutcome resource that contains the full response details.	

#### 6.2.4.1. response.details

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>details</b>							
<b>reference</b>	R	string	1	-	-	Reference to response details	OperationOutcome/cf244b87-9e5c-469d-8aa9-a671e8c2b2bc

### 6.2.5. source

The sending facility for HRM is the legal HSP that takes full responsibility for sending the message. The source for this unique identifier is the Provider Registry number assigned to your facility by eHealth Ontario.

Name	Card.	Type	RP#	Len	Code Tbl#	Sample Data
<b>source</b>	R	Element				
<b>endpoint</b>	R	uri	1	-	-	http://www.ontariomd.com

### 6.2.6. destination

The purpose of this segment is to denote the intermediary system and destination application which the message is intended. OntarioMD will inform your sending facility what to populate this field with.

Name	Card.	Type	RP#	Len	Code Tbl#	Sample Data
<b>Destination</b>	R	Element				
<b>name</b>	R	string	1	-	-	1234567890 OR 0987654321
<b>target</b>	R	Reference	1	-	-	
<b>endpoint</b>	R	uri	1	-	-	http://10.10.10.10:12345 OR http://www.SFHub.com/HubInterface

**Name:** Human-readable name for the target system; in this case HRM.

**Target:** Identifies the target end system, in this case HRM will always be the target.

**Endpoint:** Indicates where the message should be routed to. This will indicate the URI for either HRM or the Intermediary HUB being routed through.

#### 6.2.6.1. destination.Target

The target element contained within the Destination information is always defined as HRM as the true target destination and must contain the HRM URI endpoint data.

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>target</b>							
<b>display</b>	R	string	1	-	-	Display name for target system.	OMD Health Sciences

### 6.3. Operation Outcome

Operation Outcomes are sets of error, warning and information messages that provide detailed information about the outcome of some attempted system operation. They are provided as a direct system response, or component of one, where they provide information about the outcome of the operation.

Element Name	Card	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>Operation Outcome</b>						A resource that describes a message that is exchanged between systems	
<b>id</b>	R	Id	1	64	-	Internal identifier used within the message as a reference to other resources. This must be unique per resource type	cf244b87-9e5c-469d-8aa9-a671e8c2b2bc
<b>issue</b>	R	BackboneElement	1..*	-	-	A single issue associated with the action	

```

{"resource": {
  "resourceType": "OperationOutcome",
  "id": "9ffc4f11-e96f-49e5-a765-6776eaa1d115",
  "issue": [
    {
      "severity": "information",
      "code": "informational",
      "details": {"text": "Successfully connected to AIMS Web Services!"}
    }
  ]
}}

```

#### 6.3.1. issue

A repeating element that will provide details as to the response of the submitted message. This element will either contain details that the message was received successfully or will provide details as to why the message was rejected.

Name	Card	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>issue</b>							
<b>severity</b>	R	string	1	-	<a href="#">0023</a>	How the issue affects the success of the action.	error
<b>code</b>	R	Reference	1	-	<a href="#">0024</a>	A code that describes the type of issue.	invalid
<b>details</b>	R	codeableconcept	1	-	-		

##### 6.3.1.1. issue.details

Name	Card.	Type	RP#	Len	Code Tbl#	Description	Sample Data
<b>details</b>							
<b>text</b>	R	reference	1	-	-	Additional details about the error	Patient Resource must be present and only exists once.

## 7. Message Example

```

{
  "resourceType": "Bundle",
  "id": "PKG1-UC1-2-1",
  "type": "message",
  "entry": [
    {
      "resource": {
        "resourceType": "MessageHeader",
        "id": "aad83f31-326d-4792-addb-3d40fedc6457",
        "timestamp": "2017-01-18T15:13:30.121-05:00",
        "event": {
          "system": "http://hl7.org/fhir/message-events",
          "code": "diagnosticreport-provide"
        }
      },
      "source": {
        "name": "0123456789",
        "endpoint": "http://10.10.10.10:12345"
      },
      "destination": [
        {
          "name": "9876543210",
          "endpoint": "http://www.SFHub.com/HUBInterface"
        }
      ]
    }
  ],
  {
    "resource": {
      "resourceType": "Patient",
      "id": "Patient001",
      "identifier": [
        {
          "type": {
            "coding": [
              {
                "system": "http://hl7.org/fhir/v2/0203",
                "code": "MR"
              }
            ]
          }
        }
      ],
      "value": "ABC123"
    },
    {
      "extension": [
        {
          "url": "http://ehealthontario.ca/API/fhir/StructureDefinition/ext-identifier-hcn-version-code",
          "valueString": "AB"
        }
      ],
      "type": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/v2/0203",
            "code": "JHN"
          }
        ]
      },
      "system": "http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-patient-hcn",
      "value": "1234567890"
    }
  ],
  "name": [

```

```

{
  "family": [
    "Smith"
  ],
  "given": [
    "John"
  ]
},
"telecom": [
  {
    "system": "phone",
    "value": "416-555-5555",
    "use": "home",
    "rank": 1
  }
],
"gender": "male",
"birthDate": "1945-11-11",
"deceasedBoolean": false,
"address": [
  {
    "use": "home",
    "line": [
      "123 Somewhere St",
      "Suite 104"
    ],
    "city": "Toronto",
    "state": "ON",
    "postalCode": "M5S3C1",
    "country": "CAN"
  }
]
}
},
{
  "resource": {
    "resourceType": "DiagnosticOrder",
    "id": "Order001",
    "orderer": {
      "reference": "Practitioner/DR001",
      "display": "Dr Jonah Jameson"
    },
    "identifier": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/identifier-type",
              "code": "PLAC"
            }
          ]
        },
        "value": "PLAC01234"
      }
    ]
  }
},
{
  "resource": {
    "resourceType": "DiagnosticReport",
    "id": "Report001",
    "extension": [
      {
        "url": "http://ehealthontario.ca/API/fhir/StructureDefinition/ext-hrm-diagnosticReport-urgency-flag",
        "valueBoolean": true
      }
    ]
  }
}

```

```

    }
  ],
  "identifier": [
    {
      "type": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/identifier-type",
            "code": "FILL"
          }
        ]
      }
    },
    {
      "value": "FILL01234"
    }
  ],
  "status": "corrected",
  "category": {
    "coding": [
      {
        "system": "http://hl7.org/fhir/v2/0074",
        "code": "RAD"
      }
    ]
  },
  "code": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "10191-5"
      }
    ]
  },
  "effectiveDateTime": "2017-01-18T15:13:30-05:00",
  "issued": "2017-01-18T15:13:30.121-05:00",
  "performer": {
    "reference": "Practitioner/DR001"
  },
  "request": {
    "reference": "DiagnosticOrder/Order001"
  },
  "conclusion": "Elevated LDL",
  "codedDiagnosis": [
    {
      "coding": [
        {
          "system": "http://snomed.info/sct",
          "code": "447139008"
        }
      ]
    }
  ]
}
]
}
},
{
  "resource": {
    "resourceType": "DocumentManifest",
    "id": "Document001",
    "recipient": [
      {
        "reference": "Practitioner/DR001"
      },
      {
        "reference": "Practitioner/DR002"
      }
    ],
    "author": [
      {

```

```

    "reference": "Practitioner/DR001"
  }
],
"status": "current",
"content": [
  {
    "pAttachment": {
      "contentType": "application/pdf",
      "language": "en",
      "data": "TWVzc2FnZSBTdWNjZXNzZnVsbHkgRGVjb2RlZA==",
      "title": "Patients LDL Report",
      "creation": "2017-01-18T15:13:30-05:00"
    }
  }
],
"related": [
  {
    "ref": {
      "reference": "diagnosticReport/Report001"
    }
  }
]
},
{
  "resource": {
    "resourceType": "Encounter",
    "id": "Visit001",
    "identifier": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/v2/0203",
              "code": "VN"
            }
          ]
        },
        "value": "VN43210"
      }
    ],
    "status": "finished",
    "class": "outpatient",
    "period": {
      "start": "2017-01-01T08:34:56.789-05:00",
      "end": "2017-01-02T12:34:56.789-05:00"
    }
  }
},
{
  "resource": {
    "resourceType": "Practitioner",
    "id": "DR001",
    "identifier": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/v2/0203",
              "code": "MD"
            }
          ]
        },
        "system": "http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-license-physician",
        "value": "12345"
      }
    ]
  }
},

```

```

"name": {
  "family": [
    "Jameson"
  ],
  "given": [
    "Jonah"
  ]
}
},
{
  "resource": {
    "resourceType": "Practitioner",
    "id": "DR002",
    "identifier": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/v2/0203",
              "code": "MD"
            }
          ]
        },
        "system": "http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-license-physician",
        "value": "54321"
      }
    ],
    "name": {
      "family": [
        "Smith"
      ],
      "given": [
        "John"
      ]
    }
  }
}
\

```



## 8. Code Tables

**Table 0001 – Event Code**

Code	Definition
MedicationAdministration-Complete	Change the status of a Medication Administration to show that it is complete.
MedicationAdministration-Nullification	Someone wishes to record that the record of administration of a medication is in error and should be ignored.
MedicationAdministration-Recording	Indicates that a medication has been recorded against the patient's record.
MedicationAdministration-Update	Update a Medication Administration record.
admin-notify	Notification of a change to an administrative resource (either create or update). Note that there is no delete, though some administrative resources have status or period elements for this use.
diagnosticreport-provide	Provide a diagnostic report, or update a previously provided diagnostic report.
observation-provide	Provide a simple observation or update a previously provided simple observation.
patient-link	Notification that two patient records actually identify the same patient.
patient-unlink	Notification that previous advice that two patient records concern the same patient is now considered incorrect.
valueset-expand	The definition of a value set is used to create a simple collection of codes suitable for use for data entry or validation. An expanded value set will be returned, or an error message.

**Table 0002 – Identifier Use**

Code	Definition
<b>usual</b>	The identifier recommended for display and use in real-world interactions.
<b>official</b>	The identifier considered to be most trusted for the identification of this item.
<b>temp</b>	A temporary identifier.
<b>secondary</b>	An identifier that was assigned in secondary use - it serves to identify the object in a relative context, but cannot be consistently assigned to the same object again in a different context.

**Table 0003 – Identifier Type Codes**

<http://hl7.org/fhir/identifier-type>

Code	Definition
<b>UDI</b>	A identifier assigned to a device using the Universal Device Identifier framework as defined by FDA
<b>SNO</b>	An identifier affixed to an item by the manufacturer when it is first made, where each item has a different identifier.
<b>SB</b>	An identifier issued by a governmental organization to an individual for the purpose of the receipt of social services and benefits.
<b>PLAC</b>	The identifier associated with the person or service that requests or places an order.
<b>FILL</b>	The Identifier associated with the person, or service, who produces the observations or fulfills the order requested by the requestor.

<http://hl7.org/fhir/v2/0203>

Code	Display
<b>DL</b>	Driver's license number
<b>PPN</b>	Passport number
<b>BRN</b>	Breed Registry Number
<b>MR</b>	Medical record number
<b>MCN</b>	Microchip Number
<b>EN</b>	Employer number
<b>TAX</b>	Tax ID number
<b>NIIP</b>	National Insurance Payor Identifier (Payor)
<b>PRN</b>	Provider number

<b>MD</b>	Medical License number
<b>DR</b>	Donor Registration Number
<b>VN</b>	Visit Number
<b>LN</b>	License Number

**Table 0004 – Contact Point System**

<b>Code</b>	<b>Definition</b>
<b>phone</b>	The value is a telephone number used for voice calls. Use of full international numbers starting with + is recommended to enable automatic dialing support but not required.
<b>fax</b>	The value is a fax machine. Use of full international numbers starting with + is recommended to enable automatic dialing support but not required.
<b>email</b>	The value is an email address.
<b>pager</b>	The value is a pager number. These may be local pager numbers that are only usable on a particular pager system.
<b>other</b>	A contact that is not a phone, fax, or email address. The format of the value SHOULD be a URL. This is intended for various personal contacts including blogs, Twitter, Facebook, etc. Do not use for email addresses. If this is not a URL, then it will require human interpretation.

**Table 0005 – Contact Point Use**

<b>Code</b>	<b>Definition</b>
<b>home</b>	A communication contact point at a home; attempted contacts for business purposes might intrude privacy and chances are one will contact family or other household members instead of the person one wishes to call. Typically used with urgent cases, or if no other contacts are available.
<b>work</b>	An office contact point. First choice for business related contacts during business hours.
<b>temp</b>	A temporary contact point. The period can provide more detailed information.
<b>old</b>	This contact point is no longer in use (or was never correct, but retained for records).
<b>mobile</b>	A telecommunication device that moves and stays with its owner. May have characteristics of all other use codes, suitable for urgent matters, not the first choice for routine business.

**Table 0006 – Administrative Gender**

<b>Code</b>	<b>Definition</b>
-------------	-------------------

<b>male</b>	Male
<b>female</b>	Female
<b>other</b>	Other
<b>unknown</b>	Unknown

**Table 0007 – Address Use**

<b>Code</b>	<b>Definition</b>
<b>home</b>	A communication address at a home.
<b>work</b>	An office address. First choice for business related contacts during business hours.
<b>temp</b>	A temporary address. The period can provide more detailed information.
<b>old</b>	This address is no longer in use (or was never correct, but retained for records).

**Table 0008 – Address Type**

<b>Code</b>	<b>Display</b>	<b>Definition</b>
<b>postal</b>	Postal	Mailing addresses - PO Boxes and care-of addresses.
<b>physical</b>	Physical	A physical address that can be visited.
<b>both</b>	Postal & Physical	An address that is both physical and postal.

**Table 0009 – Diagnostic Report Status**

<b>Code</b>	<b>Definition</b>
<b>registered</b>	The existence of the report is registered, but there is nothing yet available.
<b>partial</b>	This is a partial (e.g. initial, interim or preliminary) report: data in the report may be incomplete or unverified.
<b>final</b>	The report is complete and verified by an authorized person.
<b>corrected</b>	Subsequent to being final, the report has been modified to correct an error in the report or referenced results.
<b>appended</b>	The report has been modified subsequent to being Final, and is complete and verified by an authorized person. New content has been added, but existing content hasn't changed.

<b>cancelled</b>	The report is unavailable because the measurement was not started or not completed (also sometimes called "aborted").
<b>entered-in-error</b>	The report has been withdrawn following a previous final release.

**Table 0010 – Diagnostic Report Category**

<b>Code</b>	<b>Description</b>
<b>AU</b>	Audiology
<b>BG</b>	Blood Gases
<b>BLB</b>	Blood Bank
<b>CG</b>	Cytogenetics
<b>CH</b>	Chemistry
<b>CP</b>	Cytopathology
<b>CT</b>	CAT Scan
<b>CTH</b>	Cardiac Catheterization
<b>CUS</b>	Cardiac Ultrasound
<b>EC</b>	Electrocardiac (e.g. EKG, EEC, Holter)
<b>EN</b>	Electroneuro (EEG, EMG, EP, PSG)
<b>GE</b>	Genetics
<b>HM</b>	Hematology
<b>ICU</b>	Bedside ICU Monitoring
<b>IMM</b>	Immunology
<b>LAB</b>	Laboratory
<b>MB</b>	Microbiology
<b>MCB</b>	Mycobacteriology
<b>MYC</b>	Mycology
<b>NMR</b>	Nuclear Magnetic Resonance
<b>NMS</b>	Nuclear Medicine Scan
<b>NRS</b>	Nursing Service Measures
<b>OSL</b>	Outside Lab
<b>OT</b>	Occupational Therapy
<b>OTH</b>	Other
<b>OUS</b>	OB Ultrasound
<b>PF</b>	Pulmonary Function
<b>PHR</b>	Pharmacy
<b>PHY</b>	Physician (Hx. Dx, admission note, etc.)
<b>PT</b>	Physical Therapy
<b>RAD</b>	Radiology

<b>RC</b>	Respiratory Care (therapy)
<b>RT</b>	Radiation Therapy
<b>RUS</b>	Radiology Ultrasound
<b>RX</b>	Radiograph
<b>SP</b>	Surgical Pathology
<b>SR</b>	Serology
<b>TX</b>	Toxicology
<b>VR</b>	Virology
<b>VUS</b>	Vascular Ultrasound
<b>XRC</b>	Cineradiograph

**Table 0011 – Encounter Status**

<b>Code</b>	<b>Definition</b>
<b>planned</b>	The Encounter has not yet started.
<b>arrived</b>	The Patient is present for the encounter, however is not currently meeting with a practitioner.
<b>in-progress</b>	The Encounter has begun and the patient is present / the practitioner and the patient are meeting.
<b>onleave</b>	The Encounter has begun, but the patient is temporarily on leave.
<b>finished</b>	The Encounter has ended.
<b>cancelled</b>	The Encounter has ended before it has begun.

**Table 0012 – Encounter Class**

<b>Code</b>	<b>Definition</b>
<b>inpatient</b>	An encounter during which the patient is hospitalized and stays overnight.
<b>outpatient</b>	An encounter during which the patient is not hospitalized overnight.
<b>ambulatory</b>	An encounter where the patient visits the practitioner in his/her office, e.g. a G.P. visit.
<b>emergency</b>	An encounter in the Emergency Care Department.
<b>home</b>	An encounter where the practitioner visits the patient at his/her home.
<b>field</b>	An encounter taking place outside the regular environment for giving care.
<b>daytime</b>	An encounter where the patient needs more prolonged treatment or investigations than outpatients, but who do not need to stay in the hospital overnight.

<b>virtual</b>	An encounter that takes place where the patient and practitioner do not physically meet but use electronic means for contact.
<b>other</b>	Any other encounter type that is not described by one of the other values. Where this is used it is expected that an implementer will include an extension value to define what the actual other type is.

**Table 0013 – Practitioner Role**

<b>Code</b>
doctor
nurse
pharmacist
researcher
teacher
ict

**Table 0014 – Assigning Authority**

<b>Code</b>	<b>Meaning</b>
CA	Canada
CA-AB	Alberta
CA-BC	British Columbia
CA-MB	Manitoba
CA-NB	New Brunswick
CA-NF	Newfoundland
CA-NS	Nova Scotia
CA-NT	Northwest Territories
CA-NU	Nunavut
CA-ON	Ontario
CA-PE	Prince Edward Island
CA-QC	Quebec
CA-SK	Saskatchewan
CA-YT	Yukon

**Table 0015 – DocumentManifest Status**

Code	Display	Definition
<b>current</b>	Current	This is the current reference for this document.
<b>superseded</b>	Superseded	This reference has been superseded by another reference.
<b>entered-in-error</b>	Entered in Error	This reference was created in error.

**Table 0016 – Address State**

Code	Meaning	Code	Meaning	Code	Meaning
<b>AB</b>	Alberta	<b>FL</b>	Florida	<b>NJ</b>	New Jersey
<b>BC</b>	British Columbia	<b>GA</b>	Georgia	<b>NM</b>	New Mexico
<b>MB</b>	Manitoba	<b>GU</b>	Guam	<b>NV</b>	Nevada
<b>NB</b>	New Brunswick	<b>HI</b>	Hawaii	<b>NY</b>	New York
<b>NF</b>	Newfoundland	<b>IA</b>	Iowa	<b>OH</b>	Ohio
<b>NS</b>	Nova Scotia	<b>ID</b>	Idaho	<b>OK</b>	Oklahoma
<b>NT</b>	Northwest Territories	<b>IL</b>	Illinois	<b>OR</b>	Oregon
<b>NU</b>	Nunavut	<b>IN</b>	Indiana	<b>PA</b>	Pennsylvania
<b>ON</b>	Ontario	<b>KS</b>	Kansas	<b>PR</b>	Puerto Rico
<b>PE</b>	Prince Edward Island	<b>KY</b>	Kentucky	<b>RI</b>	Rhode Island
<b>QC</b>	Quebec	<b>LA</b>	Louisiana	<b>SC</b>	South Carolina
<b>SK</b>	Saskatchewan	<b>MA</b>	Massachusetts	<b>SD</b>	South Dakota
<b>YT</b>	Yukon	<b>MD</b>	Maryland	<b>TN</b>	Tennessee
		<b>ME</b>	Maine	<b>TX</b>	Texas
<b>AK</b>	Alaska	<b>MI</b>	Michigan	<b>UM</b>	United States Minor Outlying Islands
<b>AL</b>	Alabama	<b>MO</b>	Missouri	<b>UT</b>	Utah
<b>AR</b>	Arkansas	<b>MP</b>	Northern Mariana Islands	<b>VA</b>	Virginia
<b>AS</b>	American Samoa	<b>MS</b>	Mississippi	<b>VI</b>	Virgin Islands, U.S.



<b>CA</b>	California	<b>MT</b>	Montana	<b>VT</b>	Vermont
<b>CO</b>	Colorado	<b>NC</b>	North Carolina	<b>WA</b>	Washington
<b>CT</b>	Connecticut	<b>ND</b>	North Dakota	<b>WI</b>	Wisconsin
<b>DC</b>	District of Columbia	<b>NE</b>	Nebraska	<b>WV</b>	West Virginia
<b>DE</b>	Delaware	<b>NH</b>	New Hampshire	<b>WY</b>	Wyoming

**Table 0017 – Physician Systems**

URI	Meaning
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-license-physician</a>	College of Physicians and Surgeons of Ontario
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-ab-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-ab-license-physician</a>	College of Physicians and Surgeons of Alberta
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-license-physician</a>	College of Physicians and Surgeons of British Columbia
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-mb-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-mb-license-physician</a>	College of Physicians and Surgeons of Manitoba
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nb-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nb-license-physician</a>	College of Physicians and Surgeons of New Brunswick
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nl-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nl-license-physician</a>	College of Physicians and Surgeons of Newfoundland & Labrador
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-ns-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-ns-license-physician</a>	College of Physicians and Surgeons of Nova Scotia
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nt-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nt-license-physician</a>	Health and Social Services - Government of the Northwest Territories
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nu-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nu-license-physician</a>	Department of Health and Social Services – Government of Nunavut
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-pe-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-pe-license-physician</a>	College of Physicians and Surgeons of Prince Edward Island
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-qc-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-qc-license-physician</a>	Collège des médecins du Québec
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-sk-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-sk-license-physician</a>	College of Physicians and Surgeons of Saskatchewan
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-yt-license-physician">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-yt-license-physician</a>	Yukon Medical Council
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-license-nurse</a>	College of Nurses of Ontario
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-ab-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-ab-license-nurse</a>	College and Association of Registered Nurses of Alberta
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-bc-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-bc-license-nurse</a>	College of Registered Nurses of British Columbia

<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-mb-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-mb-license-nurse</a>	College of Registered Nurses of Manitoba
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nb-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nb-license-nurse</a>	Nurses Association of New Brunswick
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nl-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nl-license-nurse</a>	Association of Registered Nurses of Newfoundland and Labrador
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-ns-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-ns-license-nurse</a>	College of Registered Nurses of Nova Scotia
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nt-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nt-license-nurse</a>	Registered Nurses Association of the Northwest Territories and Nunavut
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nu-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nu-license-nurse</a>	Registered Nurses Association of the Northwest Territories and Nunavut
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-pe-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-pe-license-nurse</a>	Association of Registered Nurses of Prince Edward Island
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-qc-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-qc-license-nurse</a>	Ordre des infirmières et infirmiers du Québec
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-sk-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-sk-license-nurse</a>	Saskatchewan Registered Nurses' Association
<a href="http://ehealthontario.ca/API/FHIR/NamingSystem/ca-yt-license-nurse">http://ehealthontario.ca/API/FHIR/NamingSystem/ca-yt-license-nurse</a>	Yukon Registered Nurses Association

**Table 0018 – Countries**

Code	Country
CAN	Canada
USA	United States of America
OTH	Other/Undefined

**Table 0019 – Document MIME types**

Mime Type	Description
text/plain	Represents any document that contains text and is theoretically human readable
application/pdf	PDF encoded document
image/jpeg	JPEG encoded image
image/png	PNG encoded image
image/gif	GIF encoded image
application/rtf	RTF encoded document

**Table 0020 – Health Card Provincial Systems**

URI	Province
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-on-patient-hcn	Ontario
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-ab-patient-hcn	Alberta
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-bc-patient-hcn	British Columbia
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-mb-patient-hcn	Manitoba
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nb-patient-hcn	New Brunswick
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nl-patient-hcn	Newfoundland and Labrador
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-ns-patient-hcn	Nova Scotia
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nt-patient-hcn	Northwest Territories
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-nu-patient-hcn	Nunavut
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-pe-patient-hcn	Prince Edward Island
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-qc-patient-hcn	Quebec
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-sk-patient-hcn	Saskatchewan
http://ehealthontario.ca/API/FHIR/NamingSystem/ca-yt-patient-hcn	Yukon

**Table 0021 - Special Rules**

This section defines special rules that apply data type within the following sections. Only constraints of deviations have been included and anything not listed here should be assumed to be the default FHIR or JSON usage rules.

Date Type/Element	Rules	Code Details
<b>DateTime</b>	Time values and GMT offset shall be enforced for all instances of the DateTime data type.	Regex: (((1-9][0-9]{3})-((0[1-9]) (1[012]))-((0[1-9]) ([12][0-9]) (3[01]))T((01][0-9]) (2[0-3]))(:[0-5][0-9]){2}(\.[0-9]+)?((\+ \-)((0[0-9]) (1[0-2]))(:[0-5][0-9])) (\+13(:[0-5][0-9])) \+14:00 Z))
<b>Instant</b>	GMT offset shall be enforced	Regex: (((1-9][0-9]{3})-((0[1-9]) (1[012]))-((0[1-9]) ([12][0-9]) (3[01]))T((01][0-9]) (2[0-3]))(:[0-5][0-9]){2}(\.[0-9]+)?((\+ \-)((0[0-9]) (1[0-2]))(:[0-5][0-9])) (\+13(:[0-5][0-9])) \+14:00 Z))
<b>PostalCode</b>	Postal or Zip code associated with the Patient Address	Regex: (((a-zA-Z)[0-9][a-zA-Z][0-9][a-zA-Z][0-9]) [0-9]{5}-[0-9]{4})?)

**Table 0022 – Response Codes**

Code	Description
<b>ok</b>	The message was accepted and processed without error.
<b>transient-error</b>	Some internal unexpected error occurred - wait and try again. Note - this is usually used for things like database unavailable, which may be expected to resolve, though human intervention may be required.
<b>fatal-error</b>	The message was rejected because of some content in it. There is no point in re-sending without change. The response narrative SHALL describe the issue.

**Table 0023 – Issue Severity**

Defining URL: <http://hl7.org/fhir/ValueSet/issue-severity>

Code	Description
<b>fatal</b>	The issue caused the action to fail, and no further checking could be performed.
<b>error</b>	The issue is sufficiently important to cause the action to fail.
<b>warning</b>	The issue is not important enough to cause the action to fail, but may cause it to be performed suboptimally or in a way that is not as desired.
<b>information</b>	The issue has no relation to the degree of success of the action.

**Table 0024 – Issue type**

Defining URL: <http://hl7.org/fhir/ValueSet/issue-type>

Code	Description
<b>invalid</b>	Content invalid against the specification or a profile.
<b>structure</b>	A structural issue in the content such as wrong namespace, or unable to parse the content completely, or invalid json syntax.
<b>required</b>	A required element is missing.
<b>value</b>	An element value is invalid.
<b>invariant</b>	A content validation rule failed - e.g. a schematron rule.
<b>security</b>	An authentication/authorization/permissions issue of some kind.
<b>login</b>	The client needs to initiate an authentication process.
<b>unknown</b>	The user or system was not able to be authenticated (either there is no process, or the proferred token is unacceptable).
<b>expired</b>	User session expired; a login may be required.
<b>forbidden</b>	The user does not have the rights to perform this action.
<b>suppressed</b>	Some information was not or may not have been returned due to business rules, consent or privacy rules, or access permission constraints. This information may be accessible through alternate processes.
<b>processing</b>	Processing issues. These are expected to be final e.g. there is no point resubmitting the same content unchanged.
<b>not-supported</b>	The resource or profile is not supported.
<b>duplicate</b>	An attempt was made to create a duplicate record.
<b>not-found</b>	The reference provided was not found. In a pure RESTful environment, this would be an HTTP 404 error, but this code may be used where the content is not found further into the application architecture.
<b>too-long</b>	Provided content is too long (typically, this is a denial of service protection type of error).

<b>code-invalid</b>	The code or system could not be understood, or it was not valid in the context of a particular ValueSet.code.
<b>extension</b>	An extension was found that was not acceptable, could not be resolved, or a modifierExtension was not recognized.
<b>too-costly</b>	The operation was stopped to protect server resources; e.g. a request for a value set expansion on all of SNOMED CT.
<b>business-rule</b>	The content/operation failed to pass some business rule, and so could not proceed.
<b>conflict</b>	Content could not be accepted because of an edit conflict (i.e. version aware updates) (In a pure RESTful environment, this would be an HTTP 404 error, but this code may be used where the conflict is discovered further into the application architecture.)
<b>incomplete</b>	Not all data sources typically accessed could be reached, or responded in time, so the returned information may not be complete.
<b>transient</b>	Transient processing issues. The system receiving the error may be able to resubmit the same content once an underlying issue is resolved.
<b>lock-error</b>	A resource/record locking failure (usually in an underlying database).
<b>no-store</b>	The persistent store is unavailable; e.g. the database is down for maintenance or similar action.
<b>exception</b>	An unexpected internal error has occurred.
<b>timeout</b>	An internal timeout has occurred.
<b>throttled</b>	The system is not prepared to handle this request due to load management.
<b>informational</b>	A message unrelated to the processing success of the completed operation (examples of the latter include things like reminders of password expiry, system maintenance times, etc.).