



香港特別行政區政府 HKSARGOVT

**Developers' Quick Guide
eHealth Radiology Examination Records (FHIR)**

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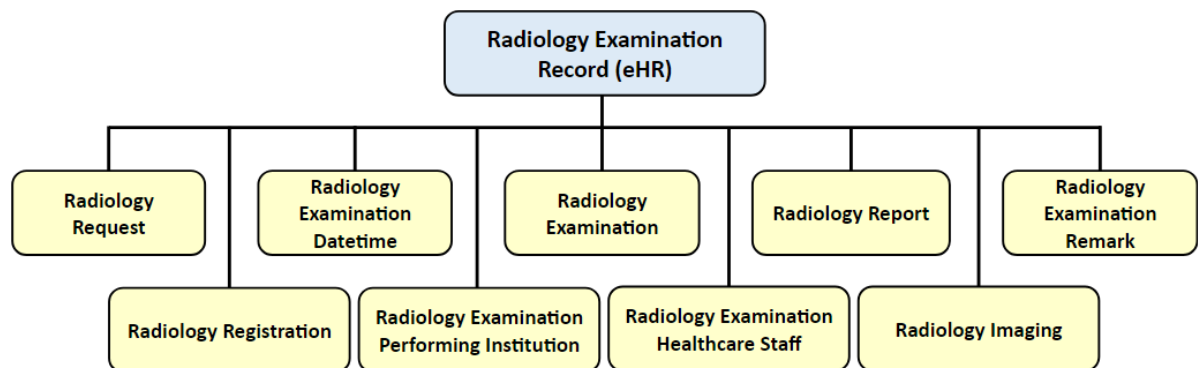
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1. Purpose

This document is intended for Information Technology personnel involved in the development of programmes to upload data from their Electronic Medical Record (EMR) system to the electronic Health Record Sharing System (eHRSS) .

The technical interface requirements for implementing Health Level Seven (HL7) Fast Healthcare Interoperability Resources (FHIR) Release 4 (R4) for uploading the Radiology Examination Records (RAD) to eHRSS are provided below. Readers who prefer more in-depth study of the HL7 FHIR (R4) standards and content standards may refer to the HL7 FHIR website <https://www.hl7.org/fhir/> and the **eHR Content Standards Guidebook** on the eHealth official website <https://www.ehealth.gov.hk/> for more detail.

2. Data Components



Radiology Request

Healthcare institution and referral number of a radiology request.

Radiology Registration

The datetime and number of radiology registration.

Radiology Examination Datetime

Datetime of the radiology examination was performed.

Radiology Examination

Basic information of radiology examination, including modality code and examination name.

Radiology Examination Healthcare Staff

Description for radiology examination healthcare staff, including English name, Chinese name and staff type.

Radiology Report

Report of the radiology record with report title, date and report submitter in Portable Document Format (PDF) or in text format.

Radiology Imaging

Image information for the radiology examination including DICOM image accession number and radiology image.

Radiology Examination Remark

Additional information about the radiology examination record.

3. Upload Standards

Supported Data Standards Level

The Radiology Examination data domain (RAD) supports Level 1 (including text / PDF report), Level 2 and Level 3 data standards.

Examples of Radiology Examination Scenarios

Below are the examples depicting the different details in Level 1, Level 2 and Level 3 radiology examination records:

Data Field	Level 1 Data	Level 2 Data	Level 3 Data
Radiology request healthcare institution Identifier	NA	NA	8877350433
Radiology request healthcare institution long name	NA	NA	Kowloon Hospital
Radiology request healthcare institution local name	NA	Dr. Chan Clinic	Kowloon Hospital
Radiology examination datetime	2023-10-20T14:30:00.000+08:00	2023-10-20T14:30:00.000+08:00	2023-10-20T14:30:00.000+08:00
Radiology modality code	CT	MRI	MRI
Radiology examination performing institution Identifier	NA	NA	8877350433
Radiology examination performing institution long name	NA	NA	Kowloon Hospital
Radiology examination performing institution local name	NA	Dr. Chan Clinic	Kowloon Hospital
Radiology examination healthcare staff type code	NA	NA	C
Radiology examination healthcare staff type description	NA	NA	Chief healthcare staff of the procedure
Radiology examination healthcare staff type local description	NA	Supervisor	Chief in-charge
Radiology image accession number	A1223456789012345	A1223456789012345	A1223456789012345

Terminology

- The clinical terminology and code sets used are provided in the **self-service kit**. For the latest codes used, please refer the eHR code sets published on the eHealth official website.

Message Standards

- FHIR R4 message standards in JSON format are adopted for Radiology Examination Records upload to eHealth.
- Resource and Element names are case-sensitive

Encoding

- UTF-8 encoding is used for eHR Clinical data exchange.

Notes:

The following conventions are used for the specifications described in this document:

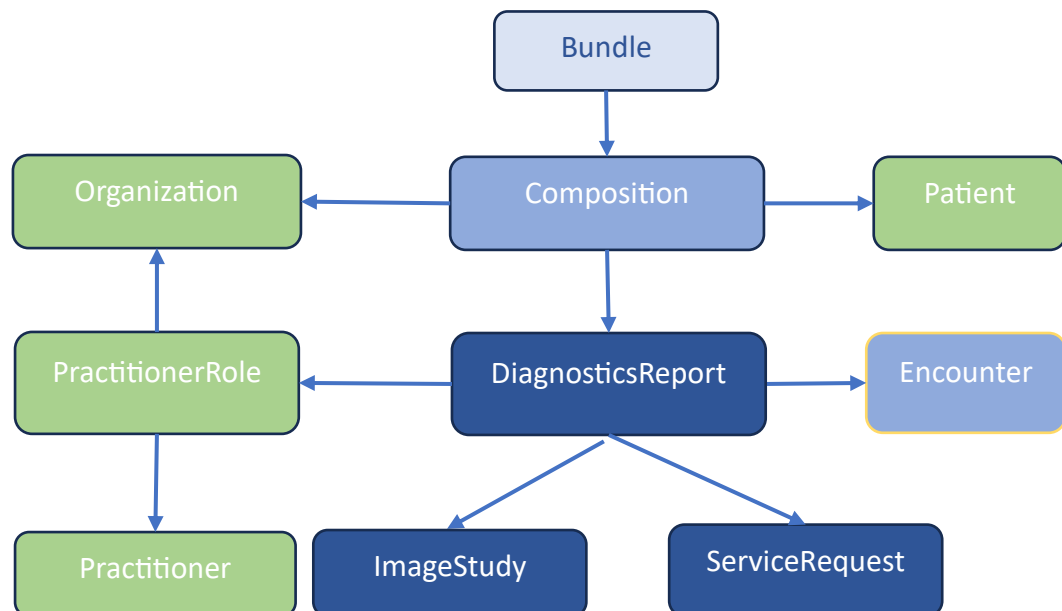
Constants:	Bolded values are constants or fixed values.
E.g.:	Example values for illustration.
[...]:	Data variables
"...":	Data values.
"M/O"	Indicates if the data field is Mandatory (M) or Optional (O). M* or O* denotes conditional Mandatory or Optional, please refer to Remarks for rules
NA:	Data Field in concern is not used.
[S]:	Must Support

4. Specification of Data uploaded

The section describes the format and data required for the data contributed to eHealth. Unused FHIR message items and those not processed by eHRSS are not listed below. Readers may refer to the HL7 (HK) website for the full HL7 FHIR R4 message specifications if required.

4.1 Composition of HL7 FHIR Message

The Radiology Examination (RAD) are structured with the HL7 FHIR components (Resources) and hierarchy as specified below.



Bundle Resource (Single occurrence in each FHIR message bundle)

- Identify the container type for the collection of data included in the bundle. The resource composition and data contents are determined by the Bundle Type. For RAD Records data upload, the following resources are included in the bundle.

Composition Resource (Single occurrence for each bundle)

- Indicate a composition of data or document are collected in the message bundle. For “document” type of bundle, the “Composition Resource” must be the first resource to be included.

Patient Resource (Single occurrence for each **Bundle**)

- Contains the demographics data of the healthcare recipient (HCR) who has the Radiology Examination.

DiagnosticReport Resource (Multiple occurrences for each **bundle**)

- Contains the Radiology Examination report of the healthcare recipient (HCR)

ServiceRequest(Single occurrence for each **DiagnosticReport**)

- Contains the request details of the DiagnosticReport

ImageStudy (Single occurrence for each **DiagnosticReport**)

- Contains the image details of the DiagnosticReport

PractitionerRole Resource(Multiple occurrences for each **DiagnosticReport**)

- Contains the performer, reporter and requester roles

Organization Resource

- Institution(s) (HCP) authored the upload Radiology Examination Records. (Single occurrence for each **Bundle**)
- Institution(s)(HCP/HCI) issued the Radiology Examination records (Multiple occurrences for each **DiagnosticReport** based on the role of the Organization)

Practitioner Resource (Multiple occurrences for each **PractitionerRole** based on the role of Organization)

- Healthcare staff issued the upload Radiology Examination Records.
- Healthcare staff reported the Radiology Examination Report.

Encounter Resource (Single occurrence for each **DiagnosticReport**)

- Contains the encounter information for the Radiology Examination Record.

4.2 Data Elements in the FHIR Resource

Details of data elements for eHRSS in each FHIR Resources are provided in below sections. Non-eHR elements which are required to complete the structure of the FHIR messages are included, and hence eHR would not process those values. Readers may refer to the Hong Kong HL7 FHIR website for further details if interested.

4.3 Data Elements in the Bundle Resource

The below table listed data elements in the Bundle Resource which identifies the beginning of the container and the collection of data resources are all included under [resource.entry] in the bundle.

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenario
resourceType	Resource Name	string(6)	<u>Fixed value:</u> " Bundle "	M	M
id	Resource id which is a logic id to identify the artifact A UUID represented as a URI (RFC 4122) Please see reference website in appendix	uuid		M	M
identifier	Identifier of the Bundle				
system	System urn	string(255)	"system" : "urn:ietf:rfc:3986"	M	M
value	System assigned unique id of the Bundle	string (45)	"value" : "urn:uuid:0c3151bd-1cbf-4d64-b04d-cd9187a4c6e0"	M	M
type	Bundle Type	string(8)	<u>Fixed value:</u> " document "	M	M
timestamp	Datetime when the bundle was assembled. [current datetime]	dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz <i>E.g.</i> "2024-03-01T15:04:48.865+08:00"	M	M
entry.fullUrl	Resources included in this bundle are collected under 'entry'	uri	<u>In Format:</u> <resource name>/<resource id> <i>E.g.</i> Composition/30551ce1-5a28-4356-b684-1e639094ad4d"	M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenario
entry.resource	Resources included in this bundle are collected under 'entry'	Backbone Element	HL7 FHIR Resources that collected in the Radiology Examination record upload Bundle include: <ul style="list-style-type: none"> • Composition • Organization • Patient • PractitionerRole • Practitioner • DiagnosticReport • ServiceRequest • ImageStudy • Encounter 	M	M
resource	A document must have a Composition as the first resource. Please refer to Composition resource requirements	BackboneElement.Resource	The 1st resource must be "Composition" resource.	M	M

4.3.1 Data Elements in the Composition Resource

The Composition Resource identifies whether the upload package includes a list of Radiology Examination records in this bundle. HCP is required to provide the record keys associated with each RAD records submitted. The record key is used to insert/update/delete a record in eHRSS.

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1-L3 M/O	Delete scenarios
resourceType	Resource name	string (11)	<u>Fixed value:</u> "Composition"	M	M
id	[resource id] which is a logic id to identify the composition A UUID represented as a URI (RFC 4122) Please see reference website in appendix	uuid		M	M
extension 99999999-SendingLocation	[Sending Location Code] A code agreed between eHRSS and the HCP which indicates the location where the data is sending from	extension url string(20)	Use [HCP ID] if sending location cannot be provided. E.g. { "url": "[eHR FHIR URL]/99999999-SendingLocation", "valueString": "[Sending Location Code]"} }	O	O

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1-L3 M/O	Delete scenarios
extension 99999999-ComplianceLevel	[Compliance Level]	extension url string(1)	<u>Permissible Values:</u> 1,2,3 E.g. "extension": { "url": "[eHR FHIR URL]/99999999-ComplianceLevel", "valueString": "[Compliance Level]" }}	M	M
extension 99999999-DomainVersion	[Domain version] The version of this interface	extension url string(11)	<u>Fixed value:</u> "eHRSS-1.5.0" E.g. { "url": "[eHR FHIR URL]/99999999-DomainVersion", "valueString": "eHRSS-1.5.0"}	M	M
extension 99999999-UploadMode	[Upload Mode]	extension url string(3)	<u>Permissible values:</u> NBL: Non Bulk load E.g. { "url": "[eHR FHIR URL]/99999999-UploadMode", "valueString": "NBL"}	M	M
status	The status is always "final". Other codes are not accepted by eHRSS.	string(5)	<u>Fixed value:</u> "final"	M	M
type.coding.system type.coding.display	Composition type A coding object is required.	CodeableConcept coding.system coding.display	<u>Fixed value:</u> "type": { "coding": [{ "system": "[eHR FHIR URL]", "display": "Hong Kong eHR Healthcare Document" }] }]	M	M
subject.reference	[resource.id] of Patient Resource included in the same bundle	Reference(100)	<u>In format:</u> Patient/<resource id> E.g. "subject": { "reference": "Patient/6e480262-978c-49f0-a793-468293932fc2" } This resource id is the same value of the Patient resource id Reference to the Patient Resource which contains demographic data of the HCR.	M	M
date	Composition creation time [Message generation time] <i>eHRSS will use this value and [record key] for overriding records uploaded in eHRSS</i>	dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz E.g. "2024-03-01T15:04:48.865+08:00"	M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1-L3 M/O	Delete scenarios
author.reference	[resource.id] of Organization Resource who is the author of this composition <i>eHRSS will not interpret this value</i>	Reference(100)	<u>In format:</u> Organization/<resource id> <i>E.g.</i> "author": [{ "reference" : "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e"}]}	M	M
title	Title of this composition <i>eHRSS will not interpret this value</i>	string(33)	<u>Fixed value:</u> title:"Hong Kong eHR Healthcare Document"	M	M
section	List the DocumentReference resource(s) in this bundle with related record key		The entry is repeatable for multiple Radiology Examination records		
title	A human readable label for this section <i>eHR will not interpret this value</i>	string(255)	<u>Fixed value:</u> "Radiology Examination Records"	M	M
code	The code to identify the section content				
coding.system	Link to data domain coding system	string(255)	<u>In Format:</u> "system": "[eHR FHIR URL]/datadomain",	M	M
coding.code	[Record type]	string(4)	<u>Fixed value:</u> "RAD"	M	M
coding.display	The long name of the record key	string(21)	<u>Fixed value:</u> "Radiology Examination"	M	M
section.entry	DiagnosticReport contains data of the HCR's Radiology Examination Records are included in this bundle.	reference(100)	This resource id is the same value of DiagnosticReport resource id	M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1-L3 M/O	Delete scenarios
extension 99999999-TransactionType	[Transaction Type] Insert/Update/Delete of a Radiology Examination Record identified by the [Record Key].	extension url string(1)	<p><u>Permissible Values:</u></p> <p>I: Insert U: Update D: Delete</p> <p>Notes:</p> <p>Insert ("I"): Upload a record which has never been uploaded to eHRSS before.</p> <p>Update ("U"): Update a record which has been uploaded to eHRSS before and its data content was changed since the last upload of this record.</p> <p>Delete ("D"): Delete a record which has been uploaded to eHRSS before and has since be cancelled or deleted.</p> <p>DM mode only permits 'I' (Insert)</p> <p>The Insert / Update / Delete is in relation to whether the record has been uploaded to eHRSS before and does not necessarily represent the actual transactions in the HCP's EMR system.</p> <p><i>E.g:</i></p> <pre>"extension": [{ "url": "[eHR FHIR URL]/99999999-TransactionType", "valueDateTime": "[Transaction Type]" }]</pre>	M	M
extension 99999999-LastUpdateDateTime	[Last Update Date Time] The last update datetime of the HCP's EMR system	extension url dateTime(29)	<p><u>In format:</u></p> <p>YYYY-MM-DDThh:mm:ss.sss+zz:zz</p> <p><i>E.g:</i> "2023-08-31T08:30:00.000+08:00"</p> <p><i>E.g:</i></p> <pre>"extension": [{ "url": "[eHR FHIR URL]/99999999-LastUpdateDateTime", "valueDateTime": "[Last Update Date Time]" }]</pre>	M	M
extension 99999999-TransactionDateTime	[Transaction Date Time] Datetime when this transaction was created in the local EMR. It indicates the transaction sequence if multiple transactions of the same record are uploaded.	extension url dateTime(29)	<p><u>In format:</u></p> <p>YYYY-MM-DDThh:mm:ss.sss+zz:zz</p> <p><i>E.g.</i> "2023-10-22T00:00:00.000+08:00"</p> <p><i>E.g.</i></p> <pre>"extension": [{ "url": "[eHR FHIR URL]/99999999-TransactionDateTime", "valueDateTime": "[Transaction Date Time]" }]</pre>	M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1-L3 M/O	Delete scenarios
extension 99999999-RecordCreateDatetime	[Record Create Datetime] Datetime when the record was created in the source system of the HCP.	extension url dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss+zz:zz <i>E.g.</i> "2023-10-22T00:00:00.000+08:00" <i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-RecordCreateDatetime", "valueDateTime": "[Record Create Datetime]" }]	O	NA
extension 99999999-RecordCreateInstIdentifier	[Record Create Institution Identifier] eHRSS assigned [Healthcare Institution Identifier] (HCI ID) of the healthcare institution where the record was created	extension url string(10)	<u>Fixed length:10</u> <i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-RecordCreateInstIdentifier", "valueString": "[Record Create Institution Identifier]" }]	O	NA
extension 99999999-RecordCreateInstName	[Record Create Institution Name] Name of healthcare institution where the record was created.	extension url string(255)	<i>E.g.:</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-RecordCreateInstName", "valueString": "[Record Create Institution Name]" }]	O	NA
extension 99999999-RecordLastUpdateDatetime	[Record Last Update Datetime] The last update datetime of the HCP's EMR system	extension url dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss+zz:zz <i>E.g.</i> "2023-10-22T00:00:00.000+08:00" <i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-RecordLastUpdateDatetime", "valueDateTime": "[Record Last Update Datetime]" }]	O	NA
extension 99999999-RecordUpdateInstIdentifier	[Record Update Institution Identifier] eHRSS assigned [Healthcare Institution Identifier] (HCI ID) of the healthcare institution where the record was last updated.	extension url string(10)	<u>Fixed length:10</u> <i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-RecordUpdateInstIdentifier", "valueString": "[Record Update Institution Identifier]" }]	O	NA
extension 99999999-RecordUpdateInstName	[Record Update Institution Name] Name of healthcare institution where the record was updated.	extension url string(255)	<i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-RecordUpdateInstName", "valueString": "[Record Update Institution Name]" }]	O	NA

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1-L3 M/O	Delete scenarios
reference.DocumentReference	[resource.id] of DiagnosticReport Resource included in the same bundle **Each entry represents each record	Reference (100)	<u>In Format:</u> DiagnosticReport/<resource id> This resource id is the same value of DocumentReference resource id	M	M
identifier.system	Link to record key coding system	string(255)	<u>In format:</u> "[HCP FHIR URL]/Recordkey"	M	M
Identifier.value	[Record key] of the Radiology Examination Record	string(40)		M	M

4.3.2 Data Elements in the Patient Resource

The Patient Resource provides the patient identifier referenced in the other Resources to identify the patient whom these RAD data belongs to. This resource also contains the basic demographic data (major keys) used for the validation of the HCR's identity.

JSON Name	Data Field	FHIR Data Type (Max Length)	Remarks	M/O	delete
resourceType	Resource name	string(7)	<u>Fixed value:</u> "Patient"	M	M
id	[resource id] reference by Composition resource A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string(45)	This id identifies the patient / HCR whose RAD records are included in the current bundle. It is used in [subject.reference] in the Composition Resources to identify the concerned patient.	M	M
identifier	eHR number for this patient	identifier	There are always 2 entries for Patient Resource [identifier.] One for eHR number and one for document number/ID.		
type.coding.system	Link to document type coding system	string(255)	<u>Fixed value:</u> "[eHR FHIR URL]/typeofID-ext"	M	M
type.coding.code	identifier type code	string(5)	<u>Fixed value:</u> "EHRNO"	M	M
value	[eHR number] A unique HCR identifier assigned by eHRSS.	integer(12)	<u>Fixed length:</u> 12 e.g. 773024585457	M	M
identifier	Document type and HKIC for this patient	identifier			
type.coding.system	Link to document type coding system	string(255)	<u>Fixed value:</u> "[eHR FHIR URL]/typeofID-ext"	M	M
type.coding.code	[Type of identity document] eHRSS document type code which is used for registration	string(5)	Refer to the document type code set provided in the self-service kit or the eHRSS official website for the most updated code set.	M	M

JSON Name	Data Field	FHIR Data Type (Max Length)	Remarks	M/O	delete
value	<p>Identity Document number of the type of document as specified above</p> <p>If document type = "ID" or "CD" or "BC" or "ECID", the Identity Document Number will comply with the HKID format, else it will be of free text format.</p>	string(12)	<p><u>In Format:</u> If [document type] is ID, BC, CD, ECID,</p> <p>format of the document number is: AANNNNNNNC or ANNNNNNNC where: C is the check digit All Uppercase</p>	M	M
name	Patient's name	At least [name.family] or [name.given] will be provided			
family	<p>[English surname] Patient's surname in English</p> <p>For single name cases, the single name can be specified in either [English surname] or [English given Name]</p>	string(40)	<p><u>Mandatory</u> if [name.text] and [name.given] are blank; else Optional</p> <p>All Uppercase letters</p>	M*	M*
given	<p>[English given name] Patient's given name in English</p>	string(40)	<p><u>Mandatory</u> if [name.text] and [name.family] are blank; else Optional</p> <p>All Uppercase letters</p>	M*	M*
text	<p>[English full name] Patient's full name in English</p>	string(100)	<p><u>Mandatory</u> if [name.family] and [name.given] are blank; else Optional</p> <p><u>In format:</u> [name.family] + [,] + 1 white space + [name.given]</p> <p>All Uppercase letters If HCR has either English surname or given name stored in local EMR system, full name should be filled.</p>	M*	M*
gender	<p>[sex] Gender of the patient</p> <p>eHR will convert the FHIR gender to eHR [Sex] according to the Section 6 conversion table</p>	code(7)	<p><u>Permissible Values:</u></p> <ul style="list-style-type: none"> - male - female - unknown <p>E.g.: "gender": "[Sex]"</p>	M	M
birthdate	<p>[Date of birth] Date of birth of the patient as indicated on the patient's identity document</p>	date(10)	<p><u>In format:</u> YYYY-MM-DD</p> <p>E.g.: "birthDate": "[Date of birth]"</p> <p>If date is exact to 'Year' (e.g. 2010), the unknown month and day should be filled with '01-01'. Example: "2010-01-01".</p> <p>If date is exact to 'Month' (e.g. 2011-12), the unknown day should be filled with '01'. Example: "2011-12-01".</p>	M	M

4.3.3 Data Elements in the Organization resource

This Organization Resource entry identifies HCP as the source of data uploading and contains only constant values.

JSON Name	Data Value	FHIR Data Type	Remarks	M/O	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value:</u> “Organization”	M	M
id	[resource id] reference by Composition resource A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string (45)	The resource id identifies the Healthcare Institution relevant to the Composition resource.	M	M
name	[Healthcare institution long name] <i>eHRSS will not interpret the value</i>	string (255)		M	M

This Organization Resource entry identifies HCP which issued or reported the Radiology Examination and it is referenced by DiagnosticReport Resource.

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value:</u> “Organization”	M	M	M	M
id	[resource id] reference by Composition resource A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string (45)	The resource id identifies the Healthcare Institution relevant to the Composition resource.	M	M	M	M
Radiology requester healthcare institution							

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Dele te Scenario
Identifier.value	<p>[Radiology request healthcare institution identifier] The healthcare institution where the radiology request was created. It is the [HCI identifier] in the eHR Healthcare Provider Index.</p> <p><i>This field is referenced by the Requester Role of PractitionerRole resource</i></p>	string(10)	<p><u>Fixed length</u>: 10</p> <p>E.g. "identifier": [{ "system": "[EHR FHIR URL]/pvdr", "value": "[Radiology request healthcare institution identifier]" }]</p>	NA	NA	O	NA
name	<p>[Radiology request healthcare institution long name] The healthcare institution where the radiology request was created. It is the [HCI displayed English long name] (or Chinese) in the eHR Healthcare Provider Index. It should be the corresponding description of the selected [HCI identifier].</p> <p><i>This field is referenced by the Requester Role of PractitionerRole resource</i></p>	string(255)	<u>Mandatory</u> Level 3 if [Radiology request institution identifier] is given, else <u>N/A</u>	NA	NA	M*	NA
alias	<p>[Radiology request healthcare institution local name] Local description of the healthcare institution where the radiology request was created.</p> <p><i>This field is referenced by the Requester Role of PractitionerRole resource</i></p>	string(255)	<u>Mandatory</u> Level 3 if [Radiology request institution identifier] is given, else <u>Optional</u> .	NA	O	M*	NA
Radiology examination performing institution							

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
Identifier.value	<p>[Radiology examination performing institution identifier] The healthcare institution where the radiology examination was performed. It is the [HCI identifier] in the eHR Healthcare Provider Index.</p> <p><i>This field is referenced by the Performer Role of PractitionerRole resource</i></p>	string(10)	<p><u>Fixed length: 10</u></p> <p>E.g. "identifier": [{ "system": "[EHR FHIR URL]/pvdr", "value": "[Radiology examination performing institution identifier]" }]</p>	NA	NA	O	NA
name	<p>[Radiology examination performing institution long name] The healthcare institution where the radiology examination was performed. It is the [HCI displayed English long name] (or Chinese) in the eHR Healthcare Provider Index. It should be the corresponding description of the selected [HCI identifier].</p> <p><i>This field is referenced by the Performer Role of PractitionerRole resource</i></p>	string (255)	<p><u>Mandatory</u> for Level 3 if [Radiology performing institution identifier] is given, else <u>N/A</u>.</p>	NA	NA	M*	NA
alias	<p>[Radiology examination performing institution local name] Local description of the healthcare institution where the radiology examination is performed.</p> <p><i>This field is referenced by the Performer Role of PractitionerRole resource</i></p>	string (255)	<p><u>Mandatory</u> Level 3 if [Radiology performing institution identifier] is given, else <u>Optional</u>.</p>	NA	O	M*	NA

4.3.4 Data Elements in PractitionerRole resource

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value:</u> “ PractitionerRole ”	M	M	M	NA
id	[resource id] reference by DiagnosticReport A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string (45)	The resource id identifies the Roles for Organization and Practitioner	NA	M	M	NA
practitioner.reference	Links the practitioner to a specific role	reference(100)	<u>In format:</u> Practitioner/<resource id> E.g: "practitioner": { "reference": "Practitioner/8d46812c-4345-45ca-b9ff-ec325816c416" } <u>Reporter-by Role</u> <ul style="list-style-type: none"> [Radiology report - reported by healthcare staff English name] [Radiology report - reported by healthcare staff Chinese name] <u>Performer Role</u> <ul style="list-style-type: none"> [Radiology examination healthcare staff type code] [Radiology examination healthcare staff type description] [Radiology examination healthcare staff type local description] [Radiology examination healthcare staff English name] [Radiology examination healthcare staff Chinese name] 	NA	O	O	NA

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
organization.reference	Links the organization to a specific role	reference(100)	<p><u>In format:</u> Organization/<resource id></p> <p>E.g. "organization": { "reference": "Organization/c3cdb0dd-9b20-4a14-82bc-3facb3da18f7" }</p> <p><u>Requester Role</u></p> <ul style="list-style-type: none"> [Radiology request healthcare institution identifier] [Radiology request healthcare institution long name] [Radiology request healthcare institution local name] <p><u>Performer Role</u></p> <ul style="list-style-type: none"> [Radiology examination performing institution identifier] [Radiology examination performing institution long name] [Radiology examination performing institution local name] 	NA	O	O	NA

4.3.5 Data Elements in Practitioner resource

The Practitioner Resource is referenced by the PractitionerRole Resource to identify the Healthcare Staff who report or perform the radiology examination.

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value:</u> "Practitioner"	M	M	M	M
id	<p>[resource id] reference by DocumentReference</p> <p>A UUID represented as a URI (RFC 4122)</p> <p>Please see reference website in appendix</p>	string (45)	The resource id identifies the Healthcare staff who issued the Radiology Examination relevant to Diagnostic Report.	M	M	M	M
Radiology report - reported by healthcare staff (Reporter Role)							

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
1003501-ReportedByChineseName	[Radiology report - reported by healthcare staff Chinese name] Full Chinese name (with title, where applicable) of the healthcare staff who reported the radiology examination information.	extension url string(10)	Maximum 10 Chinese characters. Eg. "extension": [{ "url": "[EHR FHIR URL]/1003501-ReportedByChineseName", "valueString": "[Radiology examination healthcare staff Chinese name]" }]	NA	O	O	NA
name.text	[Radiology report - reported by healthcare staff English name] Full English name (with title, where applicable) of the healthcare staff who reported the radiology examination information	string(100)	E.g. "name": [{ "text": "[Radiology report - reported by healthcare staff English name]" }]	NA	O	O	NA
Radiology examination healthcare staff (Performer role)							
1003494-ExamHCSChineseName	[Radiology examination healthcare staff Chinese name] Full Chinese name (with title, where applicable) of the healthcare staff who performed the radiology examination.	extension url string(10)	Maximum 10 Chinese characters. E.g. "extension": [{ "url": "[EHR FHIR URL]/1003494-ExamHCSChineseName", "valueString": "[Radiology examination healthcare staff Chinese name]" }]	NA	O	O	NA
Identifier.type							
coding..code	[Radiology examination healthcare staff type code] [eHR value] of the "Procedure healthcare staff type" code table which is used to identify the healthcare staff type who is chiefly responsible for the radiology examination.	string(10)	<u>Permissible values:</u> C : Chief healthcare staff of the procedure A : Assistant healthcare staff of the procedure Refer to the code set of "Procedure healthcare staff type" in Self-Service Kit. The latest code set in eHealth website shall prevail.	NA	NA	O	NA

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
coding.display	[Radiology examination healthcare staff type description] [eHR description] of the "Procedure healthcare staff type" code table which is used to identify the healthcare staff who is chiefly responsible for the radiology examination. It should be the corresponding description of the selected [radiology examination healthcare staff type code].	string(255)	<u>Mandatory</u> for Level 3 if [radiology examination healthcare staff type code] is given, else N/A. <u>Permissible values:</u> <ul style="list-style-type: none"> Chief healthcare staff of the procedure Assistant healthcare staff of the procedure Refer to the code set of "Procedure healthcare staff type" in Self-Service Kit. The latest code set in eHealth website shall prevail.	NA	NA	M*	NA
text	[Radiology examination healthcare staff type local description] Local description of the type of the healthcare staff who performed the radiology examination.	string(255)	<u>Mandatory</u> in level 3 if [radiology examination healthcare staff type code] is given, else N/A.	NA	O	M*	NA
name.text	[Radiology examination healthcare staff English name] Full English name (with title, where applicable) of the healthcare staff who performed the radiology examination.	string(100)	E.g. "name": [{ "text": "[Radiology examination healthcare staff English name]" }]]	NA	O	O	NA

4.3.6 Data Elements in the DiagnosticReport resource

The information about the details for the Radiology Examination record.

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string(16)	<u>Fixed Value:</u> "DiagnosticReport"	M	M	M	M
id	[resource id] reference by Composition resource A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string (45)		M	M	M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
1003505-RadExamRemark	[Radiology examination remark] The additional information about the radiology examination record	string(2000)		O	O	O	NA
basedOn.Reference	[resource.id] of ServiceRequest Resource which contains the details for what was requested	reference(100)	<u>In format:</u> ServiceRequest/<resource id> E.g. "basedOn": [{ "reference": "ServiceRequest/1b6d7e9e-dec1-4e68-88ec-ff83248e307f" }] <u>Mandatory</u> if [Referral number] is given	M*	M*	M*	M*
status	This is FHIR Code to identify the status of the RAD records	string(7)	<u>Fixed value:</u> final	M	M	M	M
code.text	[Radiology report title] The title of the radiology report.	string(255)	As the code is <u>mandatory</u> in DiagnosticReport, please provide the following if [Radiology report title] is not given "_code": { "extension": [{ "url": "http://hl7.org/fhir/StructureDefinition/dataAbsentReason", "valueCode": "unsupported" }] }	O	O	O	NA
subject.reference	[resource.id] of Patient Resource included in the same bundle	reference(100)	<u>In format:</u> Patient/<resource id> E.g. "subject": { "reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616" } This resource id is the same value of the Patient resource id Reference to the Patient Resource which contains demographic data of the HCR.	M	M	M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
encounter.reference	[resource.id] of Encounter Resource in which the request was created	reference(100)	<u>In format:</u> Encounter/<resource id>	O	O	O	NA
issued	[Radiology report date] The documentation date of the radiology report, first use the last endorsed date; if not available, use first endorsed date; if not available, use radiology examination date.	dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz E.g."2023-10-20T14:30:00.000+08:00"	O	O	O	NA
performer.reference	[resource id] of performing PractitionerRole who produced or coordinated the creation of the radiology examination. <i>Multiple occurrences for the performer.reference if more than one Healthcare staff</i>	reference(100)	<u>In format:</u> PractitionerRole/<resource id> <u>Related fields:</u> <ul style="list-style-type: none"> • [Radiology examination healthcare staff English name] • [Radiology examination healthcare staff Chinese name] • [Radiology examination performing institution identifier] • [Radiology examination performing institution long name] • [Radiology examination performing institution local name] 	NA	O	O	NA
resultsInterpreter.reference	[resource id] of reporting PractitionerRole who reporting the Radiology Examination report.		<u>In format:</u> PractitionerRole/<resource id> <u>Related fields:</u> <ul style="list-style-type: none"> • [Radiology report - reported by healthcare staff English name] • [Radiology report - reported by healthcare staff Chinese name] 	NA	O	O	NA

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
imagingStudy.reference	[resource id] of imageStudy which contains the details of the Images, like X-rays, MRIs, CT scans, ultrasounds, etc.	reference(100)	In format: ImageStudy/<resource id> Related fields: <ul style="list-style-type: none"> [Radiology modality code] [Radiology examination datetime] [DICOM image accession number] 	M	M	M	O
conclusion	[Radiology report (Text)] Report of the radiology examination in text format.	string(32767)		O	O	O	NA
presentedForm	Report Details	Attachment					
presentedForm.data	Radiology report (PDF)	base64Binary	In format: file://[PDF file name]	O	O	O	NA
presentedForm.url	File name of Radiology Examination Report (PDF)	url	Example: "presentedForm": [{ "content": "application/pdf", "data": [Radiology report (PDF)], "url": "file://[PDF File name]" }] Mandatory if [Radiology report (PDF)] is given	M*	M*	M*	NA

4.3.7 Data Elements in ServiceRequest

The information about the details for request or order a service.

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string (12)	Fixed value: "ServiceRequest" Mandatory if [Referral number] is given	M*	M	M	M*
id	[resource id] of ServiceRequest reference by DiagnosticReport A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string (45)	The resource id identifies the RAD relevant to the ServiceRequest resource. Mandatory if [Referral number] is given	M*	M	M	M*

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
Identifier.value	[Referral number] A unique identifier issued by the healthcare institution who referred the radiology examination to the performing institution. This number will be served as a part of the eReferral number for eReferral.	string(40)	<p>If this radiology exam is referred by other HCP, please follow the format:</p> <p>[Referring HCP ID]+[:]:+[Referral document reference number] e.g. 8088450656:12345678900000000306</p> <p>E.g: "identifier": [{ "system": "[HCP FHIR URL]/ReferringNum", "value": "[Referral number]" }]</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> • Supplement the [Referral number]: Sends the “Update” transaction with the [Referral number] to referring HCP. • Update the current [Referral number] to the [New Referral number]: Sends the “Update” transaction with the [New Referral number] to referring HCP. • Remove the [Referral number] from the existing report record: First sends a “Delete” transaction with the [Old referring number], then sends a “Insert” transaction of the same [Record key] without the [Referral number]. 	M*	M*	M*	M*
Identifier.value	[Radiology registration number] A unique identifier assigned by the Radiology Information System (RIS) of the performing institution to identify the radiology examination referred / requested.	string(20)	<p>E.g: "identifier": [{ "system": "[HCP FHIR URL]/ReferringNum", "value": "[Radiology registration number]" }]</p>	O	O	O	NA
status	Request status	string(9)	<u>Fixed value</u> : “completed”	M	M	M	M
intent	Request intent	string(5)	<u>Fixed value</u> : “order” <u>Mandatory</u> if [Referral number] is given	M	M	M	M

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
code.text	[Radiology examination name] The name of the radiology examination such as the examination region(s) or site(s).	string(200)		O	O	O	NA
occurrenceDateTime	[Radiology registration datetime] Date / time when the healthcare recipient was registered at the Radiology Department before the radiology examination.	string(23)	<u>In Format:</u> YYYY-MM-DDThh:mm:ss.sss+08:00 e.g. 2023-10-20T14:30:00.000+08:00 <u>Mandatory</u> if [Referring number] is given	M*	M*	M*	NA
requester.reference	[resource id] of requesting PractitionerRole resource who requested the radiology examination	reference(100)	E.g.: "requester": { "reference": "PractitionerRole/4037da57-d98b-400b-93fe-3d918f6aa7c8" } <u>Requester related field:</u> [Radiology request healthcare institution identifier] [Radiology request healthcare institution long name] [Radiology request healthcare institution local name]	NA	O	O	NA

4.3.8 Data Elements in ImageStudy resource

It organizes information about the imaging study

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string(9)	<u>Fixed Value:</u> "ImageStudy"	M			NA
id	[resource id] reference by DiagnosticReport resource A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string(45)	This id identifies the ImageStudy information related to RAD records which are included in the current DiagnosticReport.	O			NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
identifier.value	[Radiology image accession number] The reference number of the radiology image(s). The length of the accession number will be 16 characters according to DICOM standard.	string(20)	<p>Mandatory if [Radiology image] is given, else Optional.</p> <p><i>E.g.</i></p> <pre>{ "system": "[EHR FHIR URL]/accessionNo", "value": "[Radiology image accession number]" }</pre> <p>For [Transaction type] = "D", radiology examination record that contain accession number will be deleted together with the corresponding radiology image.</p> <p>System will not construct DICOM for image deletion. If there is any change to the radiology image for Quality or Patient Safety reason, the corresponding radiology examination record should be deleted and re-created a new record with a new accession number.</p>		M*		M*
status.value	status <i>eHRSS will not interpret the value.</i>	string(9)	Fixed Value : "available"		M		NA
modality							
system	Link to the coding system for modality	url	<p><u>For Level 1:</u> [HCP FHIR URL]/modality</p> <p><u>For Level 2 &3:</u> [EHR FHIR URL]/modality</p>		M		NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
code	[Radiology modality code] “Radiology modality” code table, to define modality of the radiology examination in Level 2 &3. Local modality code for Level 1	string(10)	E.g. "modality": [{ "system": "[EHR FHIR URL] , "code": "[Radiology modality code]" }] Refer to the code set of “Radiology modality” in Self-Service Kit for Level 2 and Level 3. The latest code set in eHealth website shall prevail.	M Use local code	M Use eHR codex		NA
started	[Radiology examination datetime] Date / time when the radiology examination was performed. If the radiology procedure examination date / time is not available, can use the report creation date; if report creation date is not available, can use the submission date to eHR.	dateTime(29)	<u>In Format:</u> YYYY-MM-DDThh:mm:ss.sss+08:00 e.g. 2023-10-20T14:30:00.000+08:00		M		NA

4.3.9 Data Elements for the Encounter resource

The information about an encounter which related to Radiology Examination performed.

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string(9)	<u>Fixed Value:</u> "Encounter"		M		NA
id	[resource id] reference by DiagnosticReport resource A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string(45)	This id identifies the Encounter information related to RAD records which are included in the current bundle.		O		NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
99999999- Attendance InstIdentifier	[Attendance institution identifier] eHRSS assigned [Healthcare Institution Identifier] (HCI ID) of the healthcare institution where the HCR receives the service.	integer(10)	Fixed length:10 <i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/99999999- AttendanceInstIdentifier", "valueString": "[Attendance institution identifier]" }]		O		NA
identifier	[Episode number] A unique reference number assigned by the healthcare institution to an episode of care. The episode of care can be of inpatient or outpatient nature	string(20)	<i>E.g.</i> { "system": "[HCP FHIR URL]/EpisodeNum", "value": "[Episode number]" }		O		NA
status	Encounter Status <i>eHRSS will not interpret the value.</i>	code	Fixed Value : "finished"		M		NA
Class	Classification of patient encounter <i>eHRSS will not interpret the value.</i>	Coding	<u>Fixed Value:</u> "class": { "system": "[eHR FHIR URL]/class", "code": "UNKNOWN", "display": "Unknown status"}		M		NA

1. Image File (PDF)

The details of PDF naming convention

File Name	<HCP ID>.<Sending Location Code>.<Record Type>.<Record Key>.<Original File Name>.<File Extension>.<eHR Number>.<Generation Date> where the <Record Type> for the Radiology Examination Data Domain is “RAD”
------------------	---

E.g.

8088450656.BRANCHA.RAD.RAD-001.123.pdf.201000000001

1. The file name must be in capital letters except pdf extension.
2. Dot “.” is used as file name delimiters and hence the value of each file name component must not contain dot “.”

The table below listed the file name components and their respective definitions:

Seq	File name Component	Definition	Length	Remarks	M/O
1	HCP ID	A unique identifier assigned to an eHealth Healthcare Provider by eHRSS	string(10)	<u>Fixed Length:</u> 10 e.g. 8088450656	M
2	Sending Location Code	A code agreed between eHRSS and the HCP which indicates the location where the data is sending from.	string(20)	Use [HCP ID] if sending location cannot be provided. <u>Format:</u> Any combination of the following alphanumeric characters: [A-Z][0-9][-_]	M
3	Record Type	A standardised code to identify the data domain	string(5)	Refer to defined Dataset Code e.g. RAD	M
4	Record Key	A unique identifier for a record within the HCP’s EMR system	string(50)	e.g. RAD-0001	M
5	Original File Name	The file name used in source institution	string(100)	e.g. 123	M
6	File Extension	pdf (Portable Document Format File)	string(3)	Fixed value: pdf	M
7	eHR Number	A unique HCR identifier assigned by eHRSS	string(12)	<u>Fixed length:</u> 12 e.g. 201000000001	M

Seq	File name Component	Definition	Length	Remarks	M/O
8	Generation Date	File generation date. It should be the same value of the [composition.date]	string(14)	In format: YYYYMMDDhhmmss	M

2. Examples

In the following samples, data variables that have to be generated with each specific upload are quoted in square brackets and highlighted in **[Red]**. The definitions and expected values of these variables are listed in the previous section. All other parts including data values should not be altered without confirmation with the eHRSS project teams.

A sample in JSON format is included in the eHealth Data Upload Self Service Kit. Developers may use it as a template for incorporation with their data uploads after modification.

Level 3 Template:

<pre>{ "resourceType": "Bundle", "id": "7c5e44e9-6ad5-4272-ace8-028051e19b19", "identifier": { "system": "urn:ietf:rfc:4122", "value": "d2f9f649-5555-4826-868b-84e015c1f1be" }, "type": "document", "timestamp": "2024-11-11T14:30:00.000+08:00", "entry": [{ "fullUrl": "Composition/30551ce1-5a28-4356-b684-1e639094ad4d", "resource": { "resourceType": "Composition", "id": "30551ce1-5a28-4356-b684-1e639094ad4d", { "url": "https://ehealth.gov.hk/FHIR/99999999-SendingLocation", "valueString": "BRANCHA" }, { "url": "https://ehealth.gov.hk/FHIR/99999999ComplianceLevel", "valueString": "3" } } }] }</pre>	Comment Bundle Resource -[Resource id for Bundle] -[current time] -[fullUrl for Composition] -[resource id for Composition] -[Sending Location] -[Compliance Level]
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<pre> }, { "url": "https://ehealth.gov.hk/FHIR/99999999-DomainVersion", "valueString": "eHRSS-1.5.0" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-UploadMode", "valueString": "NBL" }, "identifier": { "system": "urn:oid:2.16.724.4.8.10.200.10", "value": "3f69e0a5-2177-4540-baab-7a5d0877428f" }, "status": "final", "type": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR", "display": "Hong Kong eHR Healthcare Document" }] }, "subject": { "reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616" }, "date": "2023-10-20T14:30:00.000+08:00", "author": [{ "reference": "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e" }], "title": "Hong Kong eHR Healthcare Document", "section": [{ "title": "Hong Kong eHR Healthcare Document", "code": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/datadomain", "code": "RAD", "display": "Radiology Examination" }] } }] } }</pre>	<p>-[Domain Version]</p> <p>-[upload mode]</p> <p>Link to Patient Resource</p> <p>- [Message generation time]</p> <p>Link to Organization Resource</p> <p>Fixed Value</p>
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<pre>], "entry": [{ "extension": [{ "url": "https://ehealth.gov.hk/FHIR/99999999- TransactionType", "valueString": "U" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- LastUpdateDateTime", "valueDateTime": "2023-10-20T14:30:00.000+08:00" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- TransactionDateTime", "valueDateTime": "2023-10-20T14:30:00.000+08:00" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- RecordCreateDatetime", "valueDateTime": "2023-10-20T14:30:00.000+08:00" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- RecordCreateInstIdentifier", "valueString": "8877350433" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- RecordCreateInstName", "valueString": "Kowloon Hospital" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- RecordLastUpdateDatetime", "valueDateTime": "2023-10-20T14:30:00.000+08:00" }] }] </pre>	<p>- [Transaction type]</p> <p>- [Last Update datetime]</p> <p>- [Transaction datetime]</p> <p>- [Record creation datetime]</p> <p>- [Record creation institution identifier]</p> <p>- [Record creation institution name]</p> <p>-[Record last update datetime]</p>
---	---

<pre> RecordUpdateInstIdentifier", "url": "https://ehealth.gov.hk/FHIR/99999999- "valueString": "8877350433" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- "valueString": "Kowloon Hospital" }], "reference": "DiagnosticReport/534922e6-1e05-4b08-b0b3- 068773c12658", "identifier": { "system": "https://ehealth.gov.hk/FHIR/HCP/local/Recordkey", "value": "RAD-001" } }] }] } }, { "fullUrl": "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e", "resource": { "resourceType": "Organization", "id": "3b3703a9-7a26-427c-9352-4e41f046d85e", "name": "Hospital A" } }, { "fullUrl": "DiagnosticReport/534922e6-1e05-4b08-b0b3-068773c12658", "resource": { "resourceType": "DiagnosticReport", "id": "534922e6-1e05-4b08-b0b3-068773c12658", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/1003505-RadExamRemark", "_valueString": { "fhir_comments": ["Radiology examination remark"] } }] } } </pre>	<pre> - [Record update institution identifier] - [Record update institution name] Link to DiagnosticReport Resource - [Record key] -[fullUrl for Organization] -[Healthcare institution long name] -[fullUrl for DiagnosticReport] -[Radiology examination remark] </pre>
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<pre> } }, "basedOn": [{ "reference": "ServiceRequest/8030e4f9-573d-4ceb-a429-aaf2cdfbabd3" }], "status": "final", "code": { "text": "RADT01345" }, "subject": { "reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616" }, "encounter": { "reference": "Encounter/169281c8-fb76-4e9c-b30f-3dfb3a7f53f2" }, "effectiveDateTime": "2023-10-20T14:30:00.000+08:00", "issued": "2023-10-20T14:30:00.000+08:00", "performer": [{ "reference": "PractitionerRole/performerRole1" }, { "reference": "PractitionerRole/performerRole2" }], "resultsInterpreter": [{ "reference": "PractitionerRole/reporterRole" }], "imagingStudy": [{ "reference": "ImagingStudy/c220e36c-eb67-4fc4-9ba1-2fab52acec6" }], "conclusion": "Radiology report (Text)", "presentedForm": [{ "contentType": "application/pdf", "data": "JVBERi0xLjcNCiW1tbW1DQoxIDAQIDAgb2JqDQo8PC9UeX==Cover many lines", </pre>	<p>Link to ServiceRequest Resource</p> <p>-[Radiology report title]</p> <p>Link to Patient Resource</p> <p>Link to Encounter Resource</p> <p>- [Radiology report date]</p> <p>Links to PractitionerRole resource (Performer role)</p> <p>Link to PractitionerRole resource (Reporter role)</p> <p>Links to ImagingStudy resource</p> <p>-[Radiology report (Text)]</p> <p>-[PDF in Base64]</p>
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<pre> "url": "file://8088450656.BRANCHA.RAD.RAD001.123.pdf.201000000001.20090702084530" }] } }, { "fullUrl": "PractitionerRole/performerRole1", "resource": { "resourceType": "PractitionerRole", "id": "performerRole1", "practitioner": { "reference": "Practitioner/performer1" }, "organization": { "reference": "Organization/performerHCP1" } } }, { "fullUrl": "Practitioner/performer1", "resource": { "resourceType": "Practitioner", "id": "performer1", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/1003494-ExamHCSChineseName", "valueString": "Dr 小明" }], "identifier": [{ "type": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/staffTypepcd", "code": "C", "display": "Chief procedure healthcare staff", }], "text": "Chief in-charge" } }] } } </pre>	<pre> -[fullUrl for PractitionerRole] Link to Practitioner resource(Performer role) Link to Organization resource(Performer role) -[fullUrl for Practitioner] -[Radiology examination healthcare staff Chinese name] -[Radiology examination healthcare staff type code] -[Radiology examination healthcare staff type description] -[Radiology examination healthcare staff type local description] </pre>
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<pre>], "name": [{ "text": "Dr Chan Siu Ming" }] }, { "fullUrl": "PractitionerRole/performerRole2", "resource": { "resourceType": "PractitionerRole", "id": "performerRole2", "practitioner": { "reference": "Practitioner/performer2" } } }, { "fullUrl": "Practitioner/8d46812c-4345-45ca-b9ff-ec325816c416", "resource": { "resourceType": "Practitioner", "id": "performer2", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/1003494-ExamHCSChineseName", "valueString": "Dr 李醫生" }], "identifier": [{ "type": { "coding": [{ "system": "https://ehealth.gov.hk/staffTypecd", "code": "A", "display": "Chief procedure healthcare staff" }], "text": "Assistant healthcare staff of the procedure" } }] } }, </pre>	<pre> -[Radiology examination healthcare staff English name] -[fullUrl for PractitionerRole] Link to Practitioner resource (Performer role) -[fullUrl for Practitioner] -[Radiology examination healthcare staff Chinese name] -[Radiology examination healthcare staff type code] -[Radiology examination healthcare staff type description] -[Radiology examination healthcare staff type local description] </pre>
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<pre>], "status": "available", "modality": [{ "system": "https://ehealth.gov.hk/FHIR/modality", "code": "MRI" }], "started": "2023-10-20T14:30:00.000+08:00" } }, { "fullUrl": "Practitioner/reporter", "resource": { "resourceType": "Practitioner", "id": "reporter", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/1003501-ReportedByChineseName", "valueString": "高醫生" }], "name": [{ "text": "John" }] } }, { "fullUrl": "ServiceRequest/8030e4f9-573d-4ceb-a429-aaf2cdfbabd3", "resource": { "resourceType": "ServiceRequest", "id": "8030e4f9-573d-4ceb-a429-aaf2cdfbabd3", "identifier": [{ "system": "https://ehealth.gov.hk/FHIR/HCP/local/ReferringNum", "value": "8088450656:12345678900000000306" }, { "system": "https://ehealth.gov.hk/FHIR/HCP/local/RegistrationNum", "value": "16159196" }] } } </pre>	<p>-[Radiology modality code]</p> <p>-[Radiology examination datetime]</p> <p>-[fullUrl for Practitioner]</p> <p>-[Radiology report - reported by healthcare staff Chinese name]</p> <p>-[Radiology report - reported by healthcare staff English name]</p> <p>-[fullUrl for ServiceRequest]</p> <p>-[Referral number]</p> <p>-[Radiology registration number]</p>
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<pre> "type": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/typeofID-ext", "code": "EHRNO" }] }, "value": "234567808800", }, { "type": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/typeofID-ext", "code": "ID" }] }, "value": "Q1730351" }], "name": [{ "text": "CHAN, MAN MAN", "family": "CHAN", "given": ["MAN MAN"] }], "c": "female", "birthDate": "1974-12-25" }, { "fullUrl": "Encounter/169281c8-fb76-4e9c-b30f-3dfb3a7f53f2", "resource": { "resourceType": "Encounter", "id": "169281c8-fb76-4e9c-b30f-3dfb3a7f53f2", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/99999999-AttendanceInstIdentifier", "valueString": "8840188537" }] } } } </pre>	<p>Fixed value</p> <p>- [eHR Number]</p> <p>- [Type of identity document]</p> <p>- [Document number]</p> <p>- [English full name] - [English surname] - [English given name]</p> <p>- [Sex] - [Date of Birth]</p> <p>-[fullUrl for Encounter]</p> <p>-[Attendance institution identifier]</p>
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<pre> }], "identifier": [{ "system": "https://ehealth.gov.hk/FHIR/HCP/local/EpisodeNum", "value": "OP123456", }], "status": "finished", "class": { "system": "https://ehealth.gov.hk/FHIR/class", "code": "UNKNOWN", "display": "Unknown status" } }]</pre>	- [Episode number]
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3. Mapping Tables

3.1 FHIR Administrative Gender

FHIR Administrative Gender	eHR Value of [Sex]
male	M
female	F
unknown	U

4. Code Tables

Type of identity document

eHR Value	eHR Description	Chinese Description	Full Description
AR	Adoption Certificate	領養證明書	Adopted Children Register (include those issued by HKSAR and non-HKSAR government authorities)
BC	Birth Certificate - HK	香港出生證明書	Hong Kong Birth Certificate
CD	Consular Corps ID Card	領事團身份證	Consular Corps Identity Card
DI	Document of Identity for Visa Purposes	香港特別行政區簽證身份書	HKSAR Document of Identity for Visa Purposes
EC	Exemption Certificate	豁免證明書(或稱豁免登記證明書)	Certificate of Exemption
ED	eHR document	電子健康紀錄文件	Document issued by eHRC for newborn registration
ID	HKID Card	香港身份證	Hong Kong Identity Card
MD	Macao ID Card	澳門身份證	Macao Identity Card
OC	Travel documents - PRC	中華人民共和國發出之其他旅遊證件	Other travel documents issued by the People Republic of China government / authorising agent, exclude One-way Permit and Two-way Permit
OP	Travel document - overseas	其他國家/地區發出之旅遊證件	Travel documents issued by other countries / regions
OW	One-way Permit	單程証	One-way Permit
RE	Recognizance Form	擔保書(行街紙)	Recognizance Form
RP	Re-entry Permit	香港特別行政區回港證	HKSAR Re-entry Permit
TW	Two-way Permit	雙程証	Two-way Permit

5. Data variable

Variable	Variable Value	Remark
eHR FHIR URL	https://ehealth.gov.hk/FHIR	
HCP FHIR URL	https://ehealth.gov.hk/FHIR/HCP/local	

6. Appendix

Reference to generate the UUD URI

Online UUID generator : <https://www.uuidgenerator.net/>

Python uuid module documentation: <https://docs.python.org/3/library/uuid.html>

Java UUID Class Documentation:

<https://docs.oracle.com/en/java/javase/14/docs/api/java.base/java/util/UUID.html>

FHIR Reference

Bundle Resource: <https://hl7.org/fhir/R4/bundle.html>

Composition Resource: <https://hl7.org/fhir/R4/composition.html>

Patient Resource: <https://hl7.org/fhir/R4/patient.html>

Organization Resource : <https://hl7.org/fhir/r4/organization.html>

PractitionerRole Resource: <https://hl7.org/fhir/r4/practitionerrole.html>

Practitioner Reference: <https://hl7.org/fhir/r4/practitioner.html>

DiagnosticReport Resource : <https://hl7.org/fhir/r4/diagnosticreport.html>

ServiceRequest Resource : <https://hl7.org/fhir/r4/servicerequest.html>

ImageStudy Resource : <https://hl7.org/fhir/r4/imagingstudy.html>

Encounter Resource : <https://hl7.org/fhir/R4/encounter.html>