



香港特別行政區政府 HKSARGOVT

**Developers' Quick Guide  
eHealth Referral Records (FHIR)**

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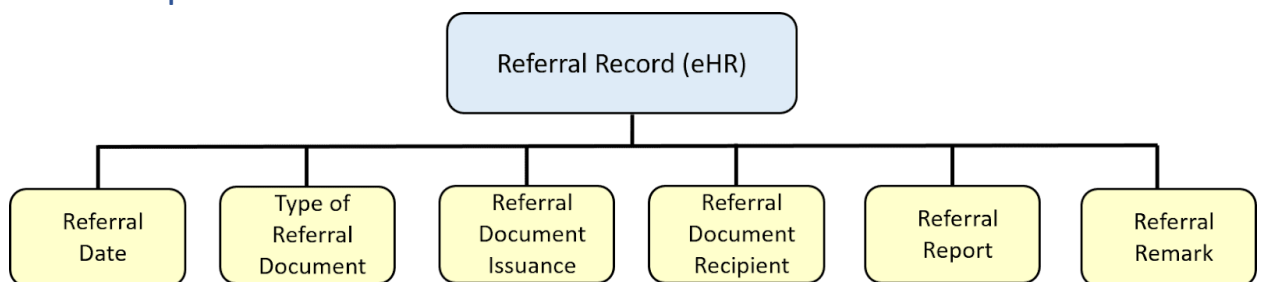
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## 1. Purpose

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 Referral Records (REF) 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



### **Referral Date**

The date when the referral / reply to the referral was issued.

### **Type of Referral Document**

The information of the type of referral document

### **Referral Document Issuance**

The information of the referral document issuance, including referral document reference number, healthcare provider information, healthcare institution information, healthcare specialty information and healthcare staff information.

### **Referral Document Recipient**

The information of the referral document recipient, including referral reference number, healthcare provider information, healthcare institution information, healthcare specialty information and healthcare staff information.

### **Referral Report**

Report of the referral record with report title in Portable Document Format (PDF) or text format.

### **Referral Remark**

Additional information about the referral record.

### 3. Upload Standards

#### Supported Data Standards Level

The Referral domain (REF) supports Level 1 (including Image / PDF report) data standard.

#### Examples of Referral Scenarios

Below is an example depicting the different details in Level 1 Referral records:

Data Field	Level 1 Request Referral Data		Level 1 Reply Referral Data	
Referral date	2023-10-27T08:00:00.000+08:00		2023-11-27T08:00:00.000+08:00	
Record key	REF-001		REPLY-001	
Type of referral document code	Request		Reply	
Type of referral document description	Request referral		Reply referral	
Type of referral document local description	Referral request		Reply referral	
Referral document reference number	125600		ST1234	
Your referral reference number	-		125600	
Referral document issuance - healthcare provider identifier	Requester	8088450656	Performer	9907819043
Referral document issuance - healthcare provider local name		Hong Kong Hospital		Hospital A
Referral document issuance - healthcare institution local name		Hong Kong Hospital		Hospital A
Referral document issuance - healthcare specialty identifier		MED		SUR
Referral document issuance - healthcare specialty description		Internal Medicine		General Surgery
Referral document issuance - healthcare specialty local description		Medical		Surgical
Referral document recipient - healthcare provider identifier	Performer	9907819043	Requester	8088450656
Referral document recipient - healthcare provider local name		Hospital A		Hong Kong Hospital
Referral document recipient - healthcare institution local name		Hospital A		Hong Kong Hospital
Referral document recipient - healthcare specialty identifier		SUR		MED
Referral document recipient - healthcare specialty description		General Surgery		Internal Medicine
Referral document <b>recipient</b> - healthcare specialty local description		Surgical		Medical
Referral report (PDF)	8088450656 .BRANCHA.REF.REF-001.123.pdf.201000000001		9907819043.CLINICA.REF. REPLY-001.ST1234.pdf.201000000001	

### 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 Referral Records upload to eHealth.
- Resource and Element names are case-sensitive

### Encoding

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

## 4. Artifacts Summary

This section provides a list of the FHIR artifact defined as part of this implementation guide:

Resource used	Definition	Cardinality
eHRSS Bundle	This profile represents the constraints and localization applied to the Bundle resource by eHRSS	1..1
eHRSS Composition	This profile represents the constraints and localization applied to the Composition resource by eHRSS	1..1
eHRSS Organization	This profile represents the constraints and localization applied to the Organization resource referenced by Composition Resource.	1..1
	This profile represents the constraints and localization applied to the Organization resource referenced by PractitionerRole Resource.	0..*
eHRSS Patient	This profile represents the constraints and localization applied to the Patient resource by Composition Resource.	1..1
eHR PractitionerRole	This profile represents the constraints and localization applied to the PractitionerRole resource referenced by ServiceRequest Resource	0..*
eHR Practitioner	This profile represents the constraints and localization applied to the Practitioner referenced by PractitionerRole Resource .	0..*
eHRSS ServiceRequest	This profile represents the constraints and localization applied to the ServiceRequest resource used by Composition.	1..*
eHR DocumentReference	This profile represents the constraints and localization applied to the DocumentReference resource used by ServiceRequest.	1..*
eHRSS Encounter	This profile defines an Encounter structure which related to REFERRAL records	0..*

Notes:

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

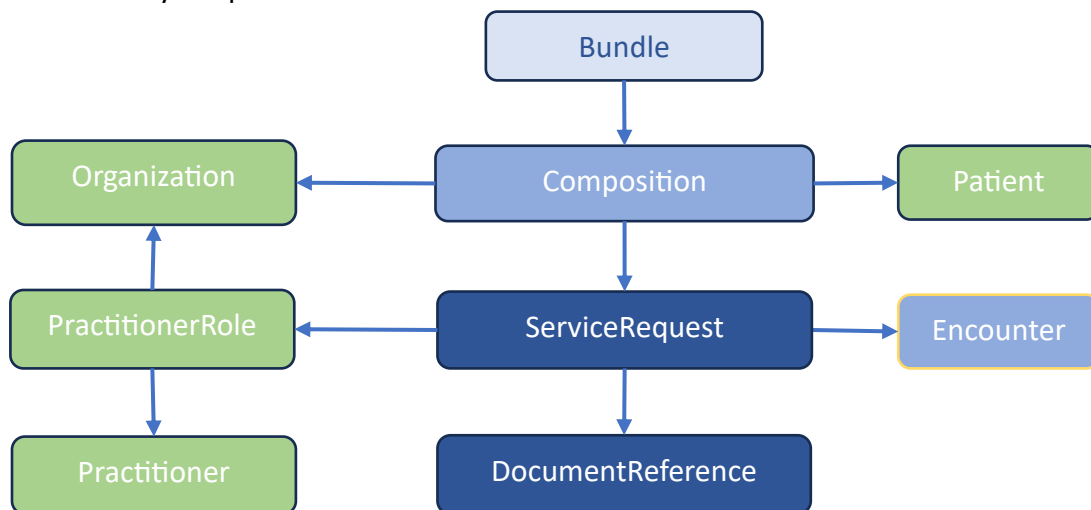
Constants:	<b>Bolded</b> values are constants or fixed values.
E.g.:	Example values for illustration.
[...]:	Data variables
"...":	Data values.
"M/O"	Indicates if the data field is Mandatory (M) or Optional (O). M* or O* denotes conditional Mandatory or Optional, please refer to Remarks for rules
NA: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

## 5. Specification of Data uploaded

The section describes the format and data required for the data contributed to eHealth. Readers may refer to the HL7 (HK) website for the full HL7 FHIR R4 message specifications if required.

### 5.1 Composition of HL7 FHIR Message

The Referral Records(REF) 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 REF 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 Referral record.

**Organization Resource** (Single occurrences are allowed for each **Bundle**)

- Institution(s) (HCP/HCI/Specialty) issued the Referral Records.
- Institution(s)(HCP/HCI/Specialty) received the Referral Records

**DocumentReference Resource** (Multiple occurrences are allowed in a **Bundle**)

- Contains the list of Referral records based on the mode of upload.

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

- Contains the encounter information for the Referral Records.

## 5.2 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.

## 5.3 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

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenario
timestamp	Datetime when the bundle was assembled. [current datetime]	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
entry.fullUrl	Resources included in this bundle are collected under 'entry'	uri	<u>In Format:</u> <resource name>/<resource id>  E.g. Composition:30551ce1-5a28-4356-b684-1e639094ad4d"	M	M
entry.resource	Resources included in this bundle are collected under 'entry'	Backbone Element	HL7 FHIR Resources that collected in the Referral record upload Bundle include: <ul style="list-style-type: none"> <li>• Composition</li> <li>• Organization</li> <li>• Patient</li> <li>• PractitionerRole</li> <li>• Practitioner</li> <li>• ServiceRequest</li> <li>• DocumentReference</li> <li>• Encounter</li> </ul>	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

### 5.3.1 Data Elements in the Composition Resource

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

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	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



JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios
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>  <i>E.g.</i> "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  <i>E.g.</i> "2024-03-01T15:04:48.865+08:00"	M	M
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>eHR 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 Referral records		
title	A human readable label for this section	string(255)	<u>Fixed value:</u> "Referral Records"	M	M
code	The code to identify the section content				

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios
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> "REF"	M	M
coding.display	The long name of the record key		<u>Fixed value:</u> "Referral Records"	M	M
section.entry	[resource.id] of ServiceRequest contains data of the HCR's Referral Records are included in this bundle.  **Each entry represents each record	Reference(100)	<u>In format:</u> ServiceRequest/<resource id>  <ul style="list-style-type: none"> <li>This resource id is the same value of ServiceRequest resource id</li> </ul>	M	M
extension 99999999-TransactionType	[Transaction Type] Insert/Update/Delete of a Referral Record identified by the [Record Key].	extension url string(1)	<u>Permissible Values:</u> <b>I:</b> Insert <b>U:</b> Update <b>D:</b> Delete  <u>Notes:</u> <ul style="list-style-type: none"> <li>Insert ("I"): Upload a record which has never been uploaded to eHRSS before.</li> <li>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.</li> <li>Delete ("D"): Delete a record which has been uploaded to eHRSS before and has since be cancelled or deleted.</li> <li>DM mode only permits 'I' (Insert)</li> <li>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.</li> </ul> <u>E.g:</u> "extension": [{ "url": "[eHR FHIR URL]/99999999-TransactionType", "valueDateTime": "[Last Update Date Time]" }]	M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios
extension 99999999- LastUpdateDateTime	[Last Update Date Time] 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> "2023-08-31T08:30:00.000+08:00"  <i>E.g:</i> "extension": { "url": "[eHR FHIR URL]/99999999- LastUpdateDateTime", "valueDateTime": "[Last Update Date Time]" }]	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)	<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- TransactionDateTime", "valueDateTime": "[Transaction Date Time]" }]	M	M
extension 99999999- ComplianceLevel	[Compliance Level]	extension url string(1)	<u>Fixed Values:</u> 1  <i>E.g.</i> "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-1.0.0"  <i>E.g.</i> { "url": "[eHR FHIR URL]/99999999- DomainVersion", "valueString": "eHRSS-1.0.0"} }	M	M
extension 99999999- UploadMode	[Upload Mode]	extension url string(5)	<u>Permissible values:</u> NBL: Non Bulk load  <i>E.g.</i> { "url": "[eHR FHIR URL]/99999999- UploadMode", "valueString": "NBL"} }	M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios
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
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.sss+zz:zz E.g. "2023-10-22T00:00:00.000+08:00"  E.g. "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> E.g. "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)	E.g.: "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.sss+zz:zz E.g. "2023-10-22T00:00:00.000+08:00"  E.g. "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> E.g. "extension": { "url": "[eHR FHIR URL]/99999999-RecordCreateInstIdentifier", "valueString": "[Record Update Institution Identifier]"} }	O	NA

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios
extension.99999999-RecordUpdateInstName	[Record Update Institution Name] Name of healthcare institution where the record was updated.	extension url string(255)	E.g. "extension": [ { "url": "[eHR FHIR URL]/99999999-RecordUpdateInstName", "valueString": "[Record Update Institution Name]" }]	O	NA
reference.ServiceRequest	[resource.id] of ServiceRequest Resource included in the same bundle  **Each entry represents each record	Reference (100)	In Format: ServiceRequest/<resource id>  This resource id is the same value of ServiceRequest resource id	M	M
identifier.system	Link to record key coding system	string(255)	In format: "[HCP FHIR URL]/Recordkey"	M	M
Identifier.value	[Record key] of the Referral Record	string(50)		M	M

### 5.3.2 Data Elements in the Patient Resource

The Patient Resource provides the patient identifier referenced in the other Resources to identify the patient whom these REFERRAL 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	sFHIR Data Type (Max Length)	Remarks	M/O	delete
resourceType	Resource name	string(7)	Fixed value: "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 Referral 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)	Fixed value: "[eHR FHIR URL]/typeofID-ext"	M	M
type.coding.code	identifier type code	string(5)	Fixed value: "EHRNO"	M	M
value	[eHR number] A unique HCR identifier assigned by eHRSS.	integer(12)	Fixed length: 12 e.g. 773024585457	M	M
identifier	Document type and HKIC for this patient	identifier			

JSON Name	Data Field	sFHIR Data Type (Max Length)	Remarks	M/O	delete
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 <b>self-service kit</b> or the eHRSS official website for the most updated code set.	M	M
value	Identity Document number of the type of document as specified above  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.	string(12)	<u>In Format:</u> If [document type] is <b>ID, BC, CD, ECID</b> ,  format of the document number is: AANNNNNNNC or ANNNNNNNC where: <ul style="list-style-type: none"> <li>C is the check digit</li> <li>All Uppercase</li> </ul>	M	M
name	Patient's name	At least [name.family] or [name.given] will be provided			
family	[English surname] Patient's surname in English  For single name cases, the single name can be specified in either [English surname] or [English given Name]	string(40)	<u>Mandatory</u> if [name.text] and [name.give] are blank; else Optional  <ul style="list-style-type: none"> <li>All Uppercase letters</li> </ul>	M*	M*
given	[English given name] Patient's given name in English	string(40)	<u>Mandatory</u> if [name.text] and [name.family] are blank; else Optional <ul style="list-style-type: none"> <li>All Uppercase letters</li> </ul>	M*	M*
text	[English full name] Patient's full name in English	string(100)	<u>Mandatory</u> if [name.family] and [name.given] are blank; else Optional  <u>In format:</u> [name.family] + [,] + 1 white space + [name.given]  <ul style="list-style-type: none"> <li>All Uppercase letters</li> <li>If HCR has either English surname or given name stored in local EMR system, full name should be filled.</li> </ul>	M*	M*
gender	[sex] Gender of the patient  eHR will convert the FHIR gender to eHR [Sex] according to the Section 6 conversion table	code(7)	<u>Permissible Values:</u> <ul style="list-style-type: none"> <li>- male</li> <li>- female</li> <li>- unknown</li> </ul> <u>E.g.:</u> "gender": "[Sex]"	M	M

JSON Name	Data Field	sFHIR Data Type (Max Length)	Remarks	M/O	delete
birthdate	[Date of birth] Date of birth of the patient as indicated on the patient's identity document	date(10)	<p>In format: 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

### 5.3.3 Data Elements in the Organization resource

The following table shows the FHIR mapping for Organization resource which referenced by Composition Resource

JSON Name	Data Value	FHIR Data Type	Remarks	M/O	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value</u> : <b>"Organization"</b>	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]	string (255)		M	M

The following table shows the FHIR mapping for Organization resource which referenced by Document Resource

JSON Name	Data Value	FHIR Data Type	Remarks	L1 Request Data	L1 Referral data	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value</u> : <b>"Organization"</b>	M	M	NA

[illegible]



JSON Name	Data Value		FHIR Data Type	Remarks	L1 Request Data	L1 Referral data	Delete Scenario
identifier	[Referral document issuance - healthcare provider identifier] The healthcare provider who issued the referral / reply record. It is the [HCP identifier] in the eHR Healthcare Provider Index.	[Referral document recipient - healthcare provider identifier] The healthcare provider to whom the referral / reply record is sent. It is the [HCP identifier] in the eHR Healthcare Provider Index.	integer(10)	Fixed length: 10	O	O	NA
name	[Referral document issuance - healthcare provider long name] The healthcare provider who issued the referral / reply record. It is the [HCP displayed English long name] or the [HCP displayed Chinese long name] in eHR Healthcare Provider Index. It should be the corresponding description of the selected [HCP identifier].	[Referral document recipient - healthcare provider long name] The healthcare provider to whom the referral / reply record is sent. It is the [HCP displayed English long name] or the [HCP displayed Chinese long name] in the eHR Healthcare Provider Index. It should be the corresponding description of the selected [HCP identifier].	string (255)		O	O	NA
alias	[Referral document issuance - healthcare provider local name] Local description for the healthcare institution who issued the referral / reply record	[Referral document recipient - healthcare provider local name] Local description of the healthcare provider to whom the referral / reply record is sent	string (255)		O	O	NA
partOf.reference	[resource.id] of another Organization Resource which is the parent of this Organization Resource		reference(100)	E.g. "partOf": { "reference": "Organization/c3cdb0dd-9b20-4a14-82bc-3facb3da18f7" }	O	O	NA

### 5.3.4 Data Elements in PractitionerRole resource

The PractitionerRole Resource provides information on the healthcare staff who issued or received the referral record and the institution of the relevant referral record included in this bundle.

JSON Name	Data Value	FHIR Data Type	Remarks	L1 Request Data	L1 Reply Data	Delete Scenario
resourceType	Resource name	string (12)	Fixed value: <b>"PractitionerRole"</b>	M	M	M
id	A system generated PractitionerRole Resource id for this download  [resource id] reference by ServiceRequest.requester or [resource id] reference by Service.Request.performer  A UUID represented as a URI (RFC 4122 )	string (40)		M	M	M
<b>Referral document issuance</b>						
practitioner.reference	Healthcare Staff for Referral document issuance	varchar(100)	[resource.id] of the Practitioner Resource which contains data of Healthcare staff who issued the referral document	O	O	NA
organization.reference	Healthcare Provider, Institution and Specialty for Referral document issuance	varchar(100)	[resource.id] of the Organization Resource which contains data of the Healthcare Provider/Institution/Specialty who issued the referral record	O	O	NA
specialty	Specialty who issued the referral document					
coding.system	Link to Specialty coding system	string(255)	In Format: "system": "[eHR FHIR URL]/InsuanceSpecialtyDesc"	O	O	NA
coding.code	[Referral document issuance - healthcare specialty identifier] [eHR value] of the "Specialty" code table. It is the healthcare specialty of the healthcare staff who issued the referral / reply record.	string(10)	Refer to the code set "Specialty" in <b>Self-Service Kit</b> . The latest code set in eHealth website shall prevail.	O	O	NA

JSON Name	Data Value	FHIR Data Type	Remarks	L1 Request Data	L1 Reply Data	Delete Scenario
coding.display	[Referral document issuance - healthcare specialty description] eHR description of the "Specialty" code table. It is the healthcare specialty of the healthcare staff who issued the referral / reply record. It should be the corresponding description of the selected [Referral document issuance - healthcare specialty identifier].	string(255)	<u>Mandatory</u> if [Referral document issuance - healthcare specialty identifier] is given, else <u>N/A</u> .  Refer to the code set "Specialty" in <b>Self-Service Kit</b> . The latest code set in eHealth website shall prevail.	M*	M*	NA
text	[Referral document issuance - healthcare specialty local description] Local description for the healthcare specialty of the healthcare staff who issued the referral / reply record	string(255)	<u>Mandatory</u> if [Referral document issuance - healthcare specialty identifier] is given, else N/A.	M*	M*	NA
<b>Referral document recipient</b>						
practitioner.reference	Healthcare Staff for Referral document recipient	varchar(10)	[resource.id] of the Practitioner Resource which contains data of the Healthcare staff who issued the referral record	O	O	NA
practitioner.reference	Healthcare Provider, Institution and Specialty for Referral document recipient	varchar(100)	[resource.id] of the Organization Resource which contains data of the Healthcare Provider/Institution/Specialty who received the referral record	O	O	NA
specialty	Specialty who received the referral document					
coding.system	Link to Specialty coding system	string(255)	<u>In Format:</u> "system": "[ <b>eHR FHIR URL</b> ]/RecipientHCSpecialtyDesc"	O	O	NA
coding.code	[Referral document recipient - healthcare specialty identifier] [eHR value] of the "Specialty" code table. It is the healthcare specialty of the healthcare staff to whom the referral / reply record is sent	string(10)	Refer to the code set "Specialty" in <b>Self-Service Kit</b> . The latest code set in eHealth website shall prevail.	O	O	NA

JSON Name	Data Value	FHIR Data Type	Remarks	L1 Request Data	L1 Reply Data	Delete Scenario
coding.display	[Referral document recipient -healthcare specialty description] [eHR description] of the "Specialty" code table. It is the healthcare specialty of the healthcare staff to whom the referral / reply record is sent. It should be the corresponding description of the selected [Referral document recipient - healthcare specialty identifier].	string(255)	<u>Mandatory</u> if [Referral document recipient - healthcare specialty identifier] is given, else N/A.	M*	M*	NA
text	[Referral document recipient - healthcare specialty local description] Local description for the healthcare specialty of the healthcare staff to whom the referral / reply record is sent.	string(255)	<u>Mandatory</u> if [Referral document recipient - healthcare specialty identifier] is given, else N/A.	M*	M*	NA

### 5.3.5 Data Elements in Practitioner resource

The Practitioner Resource provides information on the healthcare staff who issued or received the referral record and the institution of the relevant referral record included in this bundle.

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L1 M/O	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value:</u> “Practitioner”	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 practitioner who relevant to the PractitionerRole Resource.	M	M	M
<b>Referral document issuance</b>						
extension-1003471-IssuehealthcarestaffChinesename	[Referral document issuance - healthcare staff Chinese name] Full Chinese name (with title, where applicable) of the healthcare staff who issued the referral / reply record.	extension url string(10)	<i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/1003471-IssuehealthcarestaffChinesename", "valueString": "陳大文醫生" }]	O	O	NA

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L1 M/O	Delete Scenario
identifier	[Referral document issuance - healthcare staff identifier] The healthcare staff who issued the referral / reply record. It is the [HCS identifier] in the eHR Healthcare Staff Index.	integer(10)	<u>Fixed length:10</u>	O	O	NA
name.text	[Referral document issuance - healthcare staff English name] Full English name (with title, where applicable) of the healthcare staff who issued the referral / reply record	string(100)		O	O	NA
<b>Referral document recipient</b>						
extension-1003481-RehealthcarestaffChinese name	[Referral document issuance - healthcare staff Chinese name] Full Chinese name (with title, where applicable) of the healthcare staff to whom the referral / reply record is sent.	extension url string(10)	E.g. "extension": [{ "url": "[EHR FHIR URL]/1003481-RehealthcarestaffChinesename", "valueString": "陳大文醫生" }]	O	O	NA
identifier	[Referral document issuance - healthcare staff identifier] The healthcare staff who issued the referral / reply record. It is the [HCS identifier] in the eHR Healthcare Staff Index.	integer(10)	<u>Fixed length:10</u>	O	O	NA
name.text	[Referral document issuance - healthcare staff English name] Full English name (with title, where applicable) of the healthcare staff who issued the referral / reply record	string(100)		O	O	NA

### 5.3.6 Data Elements in the ServiceRequest resource

The information about the details for the Referral request/reply record.

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 Request M/O	L1 Reply M/O	Delete Scenario
resourceType	Resource name	string(17)	<u>Fixed Value:</u> "ServiceRequest"	M	M	NA

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 Request M/O	L1 Reply M/O	Delete Scenario
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	NA
extension 1003361 - TypeOfReferralCode	[Type of referral document code] eHR value of the "Type of referral document" code table. Type of referral document is to define whether it is a referral or a reply to a referral.	extension url string(10)	<u>Permissible values:</u> <b>Request</b> : Request referral <b>Reply</b> : Reply referral <b>Unknown</b> : Unknown type of referral  If HCP uploads an <b>Unknown</b> type referral, please follow the <b>Request</b> type mapping  Refer to the code set "Type of referral document" in <b>Self-Service Kit</b> . The latest code set in eHealth website shall prevail.	O	O	NA
extension 1003362- TypeOfReferralDesc	[Type of referral document description] [eHR description] of the "Type of referral document" code table, it should be the corresponding description of the selected [Type of referral document code]. Type of referral document is to define whether it is a referral or a reply to a referral.	extension url string(255)	<u>Mandatory</u> in if [Type of referral document code] is given, else <u>N/A</u> .  Refer to the code set "Type of referral document" in <b>Self-Service Kit</b> . The latest code set in eHealth website shall prevail.	M*	M*	NA
extension 1003363- TypeOfReferralLocalDesc	[Type of referral document local description] Local description created by the healthcare provider for the type of referral document. Type of referral document is to define whether it is a referral or a reply to a referral.	extension url string(255)	<u>Mandatory</u> if [Type of referral document code] is given, else <u>N/A</u> .	M*	M*	NA
identifier	[Referral document reference number] A reference number for the referral / reply record issued by the healthcare institution.	string(20)	E.g "identifier": [{ "system": "[HCP FHIR URL]/RefDocReferralNo", "value": "[Referral document reference number]"}]	O	O	NA

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 Request M/O	L1 Reply M/O	Delete Scenario
identifier	[Your referral reference number] [Your referral reference number] is used in replying a referral request. It is the reference number of the referral request issued by the referring healthcare provider.	string(20)	<u>Optional</u> if [Type of referral document code] is "Reply Referral", else N/A.  E.g. "system": "[HCP FHIR URL]/YourDocReferralNo", "value": "[Your referral reference number]"	NA	O*	NA
status	Request status  <i>eHRSS will not interpret the value.</i>		<u>Fixed value:</u> <b>completed</b>	M	M	NA
intent	Request Intent  <i>eHRSS will not interpret the value.</i>		<u>Fixed value:</u> <b>proposal</b>	M	M	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/6e480262-978c-49f0-a793-468293932fc2" } <ul style="list-style-type: none"> <li>This resource id is the same value of the Patient resource id</li> <li>Reference to the Patient Resource which contains demographic data of the HCR.</li> </ul>	M	M	NA
encounter.reference	[resource.id] of Encounter Resource in the same bundle related to the ServiceRequest resource	Reference(100)	<u>In format:</u> Encounter/<resource id>  E.g. "encounter": { "reference": " Encounter/169281c8-fb76-4e9c-b30f-3dfb3a7f53f2" }  This resource id is the same value of the Encounter resource id	O	O	NA

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 Request M/O	L1 Reply M/O	Delete Scenario
authoredOn	[Referral date] The date and time when the referral / reply to the referral was issued	dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz  E.g. "2023-10-27T08:00:00.000+08:00"	M	M	NA
requester.reference	[resource.id] of PractitionerRole Resource in the same bundle related to the HCP/HCI/Specialty who requested the service in the Referral documents.	reference(100)	For <b>request</b> referral, it reference to the Referral document <b>issuance</b> details  For <b>reply</b> referral, it reference to the Referral document <b>recipient</b> details	O	O	NA
performer.reference	[resource.id] of PractitionerRole Resource in the same bundle related to the HCP/HCI/Specialty who may perform or performed the service according to the Referral request.	reference(100)	For <b>request</b> referral, it reference to the Referral document <b>recipient</b> details  For <b>reply</b> referral, it reference to the Referral document <b>issuance</b> details	O	O	NA
supportingInfo.reference	[resource.id] of DocumentReference Resource in the same bundle related to the Referral report	reference(100)	<u>In format:</u> DocumentReference/<resource id>  E.g. "supportingInfo": [{ "reference": "DocumentReference/94c026f3-10a2-4db3-9b57-ba874e42e52b"}  This resource id is the same value of the DocumentReference resource id	M	M	NA

### 5.3.7 Data Elements in the DocumentReference resource

The information about the details for the Referral record.

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 M/O	L1 M/O	Delete Scenario
resourceType	Resource name	string(17)	<u>Fixed Value:</u> "DocumentReference"	M	M	NA



JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 M/O	L1 M/O	Delete Scenario
id	[resource id] reference by ServiceRequest resource  A UUID represented as a URI (RFC 4122 ) Please see reference website in appendix	string(45)		M	M	NA
Extension 1003367-ReferralReportText	[Referral report (Text)] Referral / reply record in text format	string(32767)	<u>Mandatory</u> if [Referral report (PDF)] is blank	M*	M*	NA
Extension 1003368-ReferralRemarks	[Referral remark] The additional information about the referral / reply record	string(500)		O	O	NA
status	This is FHIR Code to identify the status of the REFERRAL records current   superseded   entered-in-error	string(7)	<u>Fixed value:</u> <b>current</b>	M	M	NA
Content	Referral content					
attachment.data	[Referral report (PDF)] Referral / reply record in Portable Document Format (PDF)	base64Binary	<u>Mandatory</u> if [Referral report (Text)] is blank  <contentType value="application/pdf" />	M*	M*	NA
attachment.url	[PDF file name] File name of Referral (PDF)	string(255)	<u>In format:</u> Please refer the Section 6 Image file (PDF) name standard	M	M	NA
attachment.title	[Referral report title] The title of the referral / reply record.	string(255)		O	O	NA

### 5.3.8 Data Elements for the Encounter resource

The information about an encounter which related to Referral record issued.

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 Request data	L1 Reply data	Delete Scenario
resourceType	Resource name	string(9)	<u>Fixed Value:</u> "Encounter"	M	M	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 Request data	L1 Reply data	Delete Scenari o
id	[resource id] reference by ServiceRequest 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 REFERRAL records which are included in the current bundle.	O	O	NA
extension 99999999- AttendanceI nstIdentifier	[Attendance institution identifier] eHRSS assigned [Healthcare Institution Identifier] (HCI ID) of the healthcare institution where the HCR receives the service.	extension url integer(10)	<u>Fixed length:10</u> <i>E.g.</i> "extension": [ { "url": "[eHR FHIR URL]/99999999-AttendanceInstIdentifier", "valueString": "[Attendance institution identifier]" }]	O	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	O	NA
status	Encounter Status  <i>eHRSS will not interpret the value.</i>	code	Fixed Value : "finished"	M	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	M	NA

## 6. Image File (PDF)

The details of PDF naming convention

<b>File Name</b>	<HCP ID>.<Sending Location Code>.<Record Type>.<Record Key>.<Original File Name>.<File Extension>.<eHR Number>.<Generation Date> where the <Record Type> for the Referral Data Domain is “REF”
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E.g.

8088450656.BRANCHA.REF.REF-001.123.pdf.201000000001.20240802183206

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. REF	M
4	Record Key	A unique identifier for a record within the HCP’s EMR system	string(50)	e.g. REF-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: <b>pdf</b>	M
7	eHR Number	A unique HCR identifier assigned by eHRSS	string(12)	<u>Fixed length:</u> 12 e.g. 201000000001	M
8	Generation Date	File generation date. It should be the same value of the [composition.date]	string(14)	<u>In format:</u> YYYYMMDDhhmmss	M

## 7. 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 1 Request Referral 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": "2023-10-27T08:00:00.000+08:00",   "entry": [     {       "fullUrl": "Composition/30551ce1-5a28-4356-b684-1e639094ad4d",       "resource": {         "resourceType": "Composition",         "id": "30551ce1-5a28-4356-b684-1e639094ad4d ",         "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"             }           ],           "text": "Hong Kong eHR Healthcare Document"         }       }     }   ] }</pre>	<p>Comment</p> <p>Bundle Resource -[Resource id for Bundle]</p> <p>[current time]</p> <p>-[fullUrl for Composition] Composition Resource</p> <p>Link to Patient Resource</p>
---	--

<pre>"subject": {   "reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616" }, "date": "2023-10-27T00:00:00.000+08:00", "author": [   {     "reference": "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e"   } ], "title": "Hong Kong eHR Healthcare Document", "section": [   {     "title": "Referral Records",     "code": {       "coding": [         {           "system": "http://ehealth.gov.hk/FHIR/datadomain",           "code": "REF",           "display": "Referral Records"         }       ],       "text": "Referral Records"     },     "entry": [       {         "extension": [           {             "url": "https://ehealth.gov.hk/FHIR/99999999- LastUpdateDateTime",             "valueDateTime": "2023-10-27T08:00:00.000+08:00"           },           {             "url": "https://ehealth.gov.hk/FHIR/99999999- TransactonType",             "valueString": "U"           },           {             "url": "https://ehealth.gov.hk/FHIR/99999999- TransactionDateTime",             "valueDateTime": "2023-10-22T00:00:00.000+08:00"           }         ]       }     ]   } ]</pre>	<p>- [Message generation time]</p> <p>Link to Organization Resource</p> <p>[Last Update datetime]</p> <p>- [Transaction type]</p> <p>- [Transaction datetime]</p> <p>- [Compliance level]</p>
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ComplianceLevel",	"url": "https://ehealth.gov.hk/FHIR/99999999- "valueString": "1" }, {	Fixed value
DomainVersion",	"url": "https://ehealth.gov.hk/FHIR/99999999- "valueString": "eHRSS-1.1.0" }, {	- [Upload mode]
SendingLocation",	"url": "https://ehealth.gov.hk/FHIR/99999999-UploadMode", "valueString": "NBL" }, {	- [Sending location]
RecordCreateDatetime",	"url": " https://ehealth.gov.hk/FHIR/99999999- "valueString": "BRANCHA" } {	- [Record creation datetime]
RecordCreateInstIdentifier",	"url": "https://ehealth.gov.hk/FHIR/99999999- "valueDateTime": "2023-10-27T00:00:00.000+08:00" }, {	- [Record creation institution identifier]
RecordCreateInstName",	"url": " https://ehealth.gov.hk/FHIR/99999999- "valueString": "8088450656" }, {	- [Record creation institution name]
RecordLastUpdateDatetime",	"url": "https://ehealth.gov.hk/FHIR/99999999- "valueString": "Hong Kong Hospital" }, {	-[Record last update datetime]
	"url": "https://ehealth.gov.hk/FHIR/99999999- "valueDateTime": "2023-10-27T00:00:00.000+08:00" }, {	- [Record update institution identifier]
		-

<pre> RecordUpdateInstIdentifier",                                 "url": "https://ehealth.gov.hk/FHIR/99999999-                                 "valueString": "8088450656"                                 },                                 {                                 "url": "https://ehealth.gov.hk/FHIR/99999999-                                 "valueString": "Hong Kong Hospital"                                 }                                 ],                                 "reference": "ServiceRequest/1832473e-2fe0-452d-abe9-                                 "identifier": {                                 "system": "http://ehealth.gov.hk/FHIR/Recordkey",                                 "value": "REF-001"                                 }                                 }                                 ]                                 }                                 },                                 {                                 "fullUrl": "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e",                                 "resource": {                                 "resourceType": "Organization",                                 "id": "3b3703a9-7a26-427c-9352-4e41f046d85e",                                 "name": "Hong Kong Hospital"                                 }                                 },                                 {                                 "fullUrl": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616",                                 "resource": {                                 "resourceType": "Patient",                                 "id": "d58dd75b-cf09-4a1c-b913-c9e867f27616",                                 "identifier": [                                 {                                 "type": {                                 "coding": [                                 {                                 "system": "https://ehealth.gov.hk/FHIR/typeofID-ext",                                 "code": "EHRNO"                                 }                                 ]                                 }                                 }                                 ]                                 }                                 } </pre>	<p>- [Record update institution name]</p> <p>Link to DocumentReference Resource</p> <p>- [Record key]</p> <p>-[fullUrl for Organization]</p> <p>Organization Resource</p> <p>- [Resource id for Organization resource]</p> <p>- [Healthcare institution long name]</p> <p>-[fullUrl for Patient] Patient (HCR) Resource</p> <p>- Resource id for Patient resource]</p> <p>Fixed value</p> <p>- [eHR Number]</p>
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<pre>         ],         "value": "201000000001"       },       {         "type": {           "coding": [             {               "system": "https://ehealth.gov.hk/FHIR/typeofID-ext",               "code": "ID"             }           ]         },         "value": "Q1730351"       }     ],     "active": true,     "name": [       {         "text": "CHAN, MAN MAN",         "family": "CHAN",         "given": "MAN MAN"       }     ],     "gender": "female",     "birthDate": "1974-12-25"   },   {     "fullUrl": "ServiceRequest/1832473e-2fe0-452d-abe9-3cdb9879522f",     "resource": {       "resourceType": "ServiceRequest",       "id": "1832473e-2fe0-452d-abe9-3cdb9879522f",       "extension": [         {           "url": "https://ehealth.gov.hk/FHIR/1003361-TypeOfReferralCode",           "valueString": "Request"         },         {           "url": "https://ehealth.gov.hk/FHIR/1003362-TypeOfReferralDesc",           "valueString": "Request referral"         }       ]     }   } } </pre>	<ul style="list-style-type: none"> <li>- [Type of identity document]</li> <li>- [Document number]</li> <li>- [English full name]</li> <li>- [English surname]</li> <li>- [English given name]</li> <li>- [Sex]</li> <li>- [Date of Birth]</li> <li>- [fullUrl for ServiceRequest]</li> <li>- [Resource id for ServiceRequest resource]</li> <li>- [Type of referral document code]</li> <li>- [Type of referral document description]</li> <li>- [Type of referral document local description]</li> </ul>
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<pre> "url": "https://ehealth.gov.hk/FHIR/1003363- TypeOfReferralLocalDesc", "valueString": "Request referral"     },     ],     "identifier": [         {             "system": "https://ehealth.gov.hk/FHIR/HCP/local/RefDocReferralNo",             "value": "125600"         }     ],     "status": "completed",     "intent": "proposal",     "subject": {         "reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616"     },     "encounter": {         "reference": "Encounter/169281c8-fb76-4e9c-b30f-3dfb3a7f53f2"     },     "authoredOn": "2023-10-27T08:00:00.000+08:00",     "requester": {         "reference": "PractitionerRole/4037da57-d98b-400b-93fe-3d918f6aa7c8"     },     "performer": [         {             "reference": "PractitionerRole/8f588cd6-6c17-4ad6-9255-106ccba45b53"         }     ],     "supportingInfo": [         {             "reference": "DocumentReference/94c026f3-10a2-4db3-9b57-ba874e42e52b"         }     ] }, {     "fullUrl": "PractitionerRole/4037da57-d98b-400b-93fe-3d918f6aa7c8",     "resource": {         "resourceType": "PractitionerRole",         "id": "4037da57-d98b-400b-93fe-3d918f6aa7c8",         "_id": {             "fhir_comments": [                 "RequesterRole",                 "Requester"             ]         }     } } </pre>	<pre> -[Referral document reference number]  Link to Patient Resource  Link to Encounter Resource  -[Referral date]  Link to PractitionerRole Resource Link to PractitionerRole Resource  Link to DocumentReference Resource  -[fullUrl for PractitionerRole] PractitionerRole Resource [Resource id for PractitionerRole resource]  Link to Practitioner Resource </pre>
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**Level 1 Reply Referral Template:**

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<pre>"code": {   "coding": [     {       "system": "http://ehealth.gov.hk/FHIR/datadomain",       "code": "REF",       "display": "Referral Records"     }   ],   "text": "Referral Records" }, "entry": [   {     "extension": [       {         "url": "https://ehealth.gov.hk/FHIR/99999999- LastUpdateDateTime",         "valueDateTime": "2023-11-27T08:00:00.000+08:00"       },       {         "url": "https://ehealth.gov.hk/FHIR/99999999- TransactonType",         "valueString": "U"       },       {         "url": "https://ehealth.gov.hk/FHIR/99999999- TransactionDateTime",         "valueDateTime": "2023-11-27T00:00:00.000+08:00"       },       {         "url": "https://ehealth.gov.hk/FHIR/99999999- ComplianceLevel",         "valueString": "1"       },       {         "url": "https://ehealth.gov.hk/FHIR/99999999- DomainVersion",         "valueString": "eHRSS-1.1.0"       },       {         "url": "https://ehealth.gov.hk/FHIR/99999999-UploadMode",         "valueString": "NBL"       }     ]   } ]</pre>	<ul style="list-style-type: none"><li>- [Last Update datetime]</li><li>- [Transaction type]</li><li>- [Transaction datetime]</li><li>- [Compliance level]</li><li>Fixed value</li><li>- [Upload mode]</li></ul>
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<pre>     ]     },     "practitioner": {       "reference": "Practitioner/8d46812c-4345-45ca-b9ff-ec325816c416"     },     "organization": {       "reference": "Organization/afeae3fd-7b0b-4d51-a683-d4668cf9d9fa"     },     "specialty": [       {         "coding": [           {             "system": "https://ehealth.gov.hk/FHIR/RecipientSpecialtyDesc",             "code": "MED",             "display": "Internal Medicine"           }         ],         "text": "Medical"       }     ]   },   {     "fullUrl": "Practitioner/8d46812c-4345-45ca-b9ff-ec325816c416",     "resource": {       "resourceType": "Practitioner",       "id": "8d46812c-4345-45ca-b9ff-ec325816c416",       "_id": {         "fhir_comments": [           "Recipient",           "Requester"         ]       },       "extension": [         {           "url": "https://ehealth.gov.hk/FHIR/1003481-RechealthcarestaffChinesename",           "valueString": "陳大文醫生"         }       ],       "identifier": [         { </pre>	<p>Link to Practitioner Resource Link to Organization Resource</p> <p>-[Referral document recipient - healthcare specialty identifier] -[ Referral document recipient - healthcare specialty description] -[ Referral document recipient - healthcare specialty local description]</p> <p>-[fullUrl for Practitioner] Practitioner Resource [Resource id for Practitioner resource]</p> <p>-[Referral document recipient - healthcare staff Chinese name]</p> <p>-[Referral document recipient - healthcare staff identifier]</p>
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<pre>         "coding": [             {                 "code": "HCP"             }         ],         "system": "https://ehealth.gov.hk/FHIR/pvdr",         "value": "8088450656"     },     "name": "Hong Kong Hospital",     "alias": [         "Hong Kong Hospital"     ],     "fhir_comments": [         "Recipient HCP",         "Requester"     ] }, {     "fullUrl": "PractitionerRole/8f588cd6-6c17-4ad6-9255-106ccba45b53",     "resource": {         "resourceType": "PractitionerRole",         "id": "8f588cd6-6c17-4ad6-9255-106ccba45b53",         "_id": {             "fhir_comments": [                 "Issuance Role",                 "Performer"             ]         },         "practitioner": {             "reference": "Practitioner/c2277753-9f90-4a95-8ddb-a0b3f6e7d292"         },         "organization": {             "reference": "Organization/2b90dd2b-2dab-4c75-9bb9-a355e07401e8"         },         "specialty": [             {                 "coding": [                     {                         "system": "https://ehealth.gov.hk/FHIR/InssuanceSpecialtyDesc",                         "code": "SUR", </pre>	<pre> -[Referral document recipient - healthcare provider identifier] -[Referral document recipient - healthcare provider long name] -[Referral document recipient - healthcare provider local name]  -[fullUrl for PractitionerRole] PractitionerRole Resource [Resource id for PractitionerRole resource]  Link to Practitioner Resource  Link to Organization Resource  -[Referral document issuance - healthcare specialty identifier] -[Referral document issuance - healthcare specialty description] </pre>
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<pre>         "display": "General Surgery"       },     ],     "text": "Surgical"   } ] }, {   "fullUrl": "Practitioner/c2277753-9f90-4a95-8ddb-a0b3f6e7d292",   "resource": {     "resourceType": "Practitioner",     "id": "c2277753-9f90-4a95-8ddb-a0b3f6e7d292",     "_id": {       "fhir_comments": [         "Issuance",         "Performer"       ]     },     "extension": [       {         "url": "https://ehealth.gov.hk/FHIR/1003471-IssuehealthcarestaffChinesename",         "valueString": "黃大衛醫生"       }     ],     "identifier": [       {         "value": "9999900000"       }     ],     "name": [       {         "text": "Dr. David Wong"       }     ]   } }, {   "fullUrl": "Organization/2b90dd2b-2dab-4c75-9bb9-a355e07401e8",   "resource": { </pre>	<pre> - [Referral document issuance - healthcare specialty local description]  - [fullUrl for Practitioner] Practitioner Resource [Resource id for PractitionerRole resource]  - [Referral document issuance - healthcare staff Chinese name]  - [Referral document issuance - healthcare staff identifier]  - [Referral document issuance - healthcare staff English name]  - [fullUrl for Organization] Organization Resource - [Resource id for Organization resource] </pre>
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    "resourceType": "Organization",
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        "type": {
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            {
              "code": "HCI"
            }
          ]
        },
        "system": "https://ehealth.gov.hk/FHIR/pvdr",
        "value": "9999999800"
      }
    ],
    "name": "Clinic A",
    "alias": [
      "Clinic A"
    ],
    "partOf": {
      "reference": "Organization/c87bf51c-e53c-4bfe-b8b7-aa62bdd93002"
    }
  },
  {
    "fullUrl": "Organization/c87bf51c-e53c-4bfe-b8b7-aa62bdd93002",
    "resource": {
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      "id": "c87bf51c-e53c-4bfe-b8b7-aa62bdd93002",
      "identifier": [
        {
          "type": {
            "coding": [
              {
                "code": "HCP"
              }
            ]
          },
          "system": "https://ehealth.gov.hk/FHIR/pvdr",
          "value": "9907819043"
        }
      ],
      "name": "Hospital A",

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- [Referral document issuance - healthcare institution identifier]  
 - [Referral document issuance - healthcare institution long name]  
 - [Referral document issuance - healthcare institution local name]  
 [fullUrl for Organization]  
 Organization Resource  
 -[Resource id for Organization resource]

-[Referral document issuance - healthcare provider identifier]

<pre>         "alias": [             "Hospital A"         ]     },     {         "fullUrl": "DocumentReference/94c026f3-10a2-4db3-9b57-ba874e42e52b",         "resource": {             "resourceType": "DocumentReference",             "id": "94c026f3-10a2-4db3-9b57-ba874e42e52b",             "extension": [                 {                     "url": "https://ehealth.gov.hk/FHIR/1003367-ReferralReportText"                 },                 {                     "url": "https://ehealth.gov.hk/FHIR/1003368-ReferralRemarks",                     "valueString": "abc"                 }             ],             "status": "current",             "content": [                 {                     "attachment": {                         "contentType": "application/pdf",                         "data": "JVBERi0xLjcNCiW1tbW1DQoxIDAgb2JqDQo8PC9UeX==&lt;Cover many lines&gt;",                         "url": "file:///9907819043.CLINICA.REF.REPLY-001.ST1234.pdf.201000000001.20231027000000",                         "title": "Surgical Referral Reply"                     }                 }             ]         }     },     {         "fullUrl": "urn:uuid:169281c8-fb76-4e9c-b30f-3dfb3a7f53f2",         "resource": {             "resourceType": "Encounter",             "id": "169281c8-fb76-4e9c-b30f-3dfb3a7f53f2",             "extension": [                 {                     "url": "https://ehealth.gov.hk/FHIR/99999999-AttendanceInstIdentifier", </pre>	<pre> - [Referral document issuance - healthcare provider long name] - [ Referral document issuance - healthcare provider local name]  [fullUrl for DocumentReference] DocumentReference Resource [Resource id for DocumentReference resource] - [Referral report (Text)]  - [Referral remark]  [Referral report (PDF) in base64]  [Filename] [Referral report title]  - [fullUrl for Encounter] Encounter Resource - [Resource id for Encounter resource]  - [Attendance institution identifier] </pre>
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<pre>        "valueString": "8088450656"       },     ],     "identifier": [       {         "system": "https://ehealth.gov.hk/FHIR/HCP/local/EpisodeNum",         "value": "OP123456"       }     ],     "status": "finished",     "class": {       "system": "http://ehealth.gov.hk/FHIR/class",       "code": "UNKNOWN",       "display": "Unknown status"     }   } } ]</pre>	- [Episode number]
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## 8. Mapping Tables

### 8.1 FHIR Administrative Gender

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

## 9. 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

## 10. Data variable

Variable	Variable Value	Remark
eHR FHIR URL	<a href="https://ehealth.gov.hk/FHIR">https://ehealth.gov.hk/FHIR</a>	
HCP FHIR URL	<a href="https://ehealth.gov.hk/FHIR/HCP/local">https://ehealth.gov.hk/FHIR/HCP/local</a>	

## 11. 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>

DocumentReference Resource: <https://hl7.org/fhir/r4/documentreference.html>

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

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