醫健通

eHealth

香港特別行政區政府 HKSARGOVT

Developers' Quick Guide
eHealth Clinical note / Summery Records (FHIR)

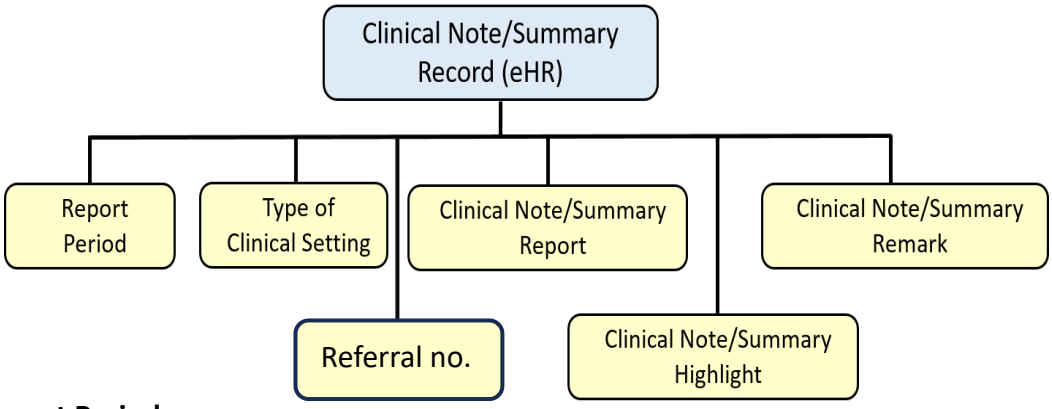
1 Contents

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 Clinical note / summary Records (EPIS) 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 details.

2. Data Components



Report Period

The start date and end date of the period in which the Clinical Note/Summary intended to cover.

Type of Clinical Setting

It is the type of clinical service, e.g. inpatient, outpatient, under which the Clinical Note/Summary is created.

Referral number

A unique identifier issued by the healthcare institution who referred the healthcare recipient to the performing / visited institution.

Clinical Note/Summary Report

The report to be uploaded must be within the 'Clinical report list' defined by eHR. The report uploads should contain Report entity identifier, Report title, Report date and Report in PDF or Text format.

Clinical Note/Summary Highlight

It is the summary of important information of the Clinical Note/Summary.

Clinical Note/Summary Remark
It is the additional information of the Clinical Note/Summary.

3. Upload Standards

Supported Data Standards Level

The Clinical Note/Summary data domain (EPIS) supports Level 1 (including PDF/Text report) data standard.

Examples of Clinical Note/Summary Scenarios
Below is an example depicting the different details in Level 1 Clinical Note/Summary record:

Data Field	Level 1 Data
Report start date	2023-01-31T00:00:00.000+08:00
Report end date	2023-02-01T00:00:00.000+08:00
Type of clinical setting code	IP
Type of clinical setting description	Inpatient record
Type of clinical setting local description	Hospitalisation record
Report entity identifier	102103
Clinical note / summary report title	Discharge Summary
Clinical note / summary report date	2023-02-02T00:00:00.000+08:00
Clinical note /summary highlight	Fever of Unknown Origin (FUO)
Clinical note / summary remark	Pay special attention to eyes and liver

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

Message Standards
- FHIR R4 message standards in JSON format are adopted for Clinical Note/Summary 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 Author Organization	This profile represents the constraints and localization applied to the Organization Resource referenced by Composition Resource.	1..1
eHRSS Patient	This profile represents the constraints and localization applied to the Patient Resource by eHRSS.	1..1
eHR DocumentReference	This profile represents the constraints and localization applied to the DocumentReference Resource referenced by Composition resource.	1..*
eHRSS Encounter	This profile defines an Encounter structure which related to Clinical note / summary records and referenced by DocumnetReference Resource	0..1

Notes:

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

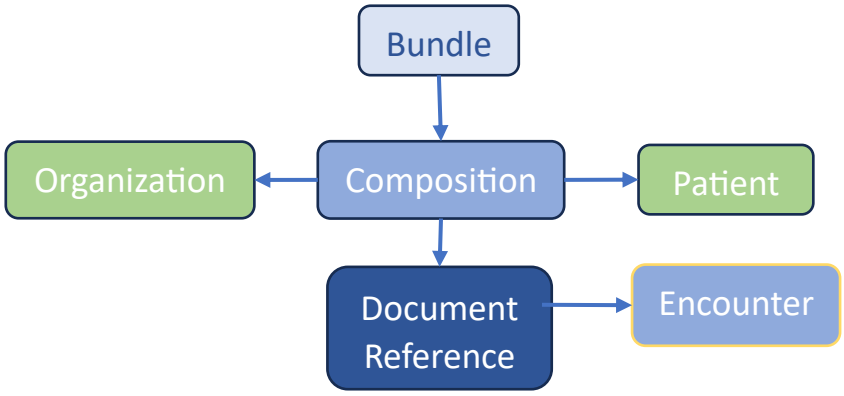
Constants:	***Bolded** values are constants or fixed values.*
E.g.:	*Example values for illustration.*
[…]:	*Data variables*
"…":	*Data values.*
"M/O"	*Indicates if the data field is Mandatory (M) or Optional (O). M* or O* denotes conditional Mandatory or Optional, please refer to Remarks for rules*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

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 Clinical note / summary Records are structured with the HL7 FHIR components (Resources) and hierarchy as specified below.



Bundle Resource (Single occurrence in each FHIR message bundle)

- Identifies 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 EPIS Records data upload, the following resources are included in the bundle.

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

- Indicates 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.

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

- Institution(s) (HCP) authored the upload Clinical notes/summary records.

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

- Contains the demographics data of the healthcare recipient (HCR) who has the clinical note / summary.

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

- Contains the list of Clinical Note/Summary records based on the mode of upload.

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

- Contains the encounter information for the Clinical Note/Summary.

5.2 Data Elements in the FHIR Resource

Details of data elements for eHRSS in each FHIR Resources are provided in the sections below. 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)	Fixed value: "**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)	Fixed value: "**document**"	M	M
timestamp	Datetime when the bundle was assembled. [current datetime]	dateTime(29)	In format: 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	In Format: <resource name>/<resource id> E.g. 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 Clinical Notes/Summary record upload Bundle include: • Composition • Organization • Patient • DocumentReference • 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

5.3.1 Data Elements in the Composition Resource

The Composition Resource identifies whether the upload package includes a list of Clinical note / Summary Report records in this bundle. HCP is required to provide the record keys associated with each EPIS 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)	Fixed value: "**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
status	The status is always "final". Other codes are not accepted by eHRSS	string(5)	Fixed value: "**final**"	M	M

type.coding.system
type.coding.display
	Composition type
	
	A coding object is required
		CodeableConcept
		
		coding.system
		
		coding.display
			Fixed value:
			"type": {
			"coding": [
			{
			"system": "**[eHR FHIR URL]**",
			"display": "**Hong Kong eHR Healthcare Document**"
			}]}
				M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios

subject.reference	[resource.id] of Patient Resource included in the same bundle	Reference(100)	In format:
			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] *eHRSS will use this value and [record key] for overriding records uploaded in eHRSS*	dateTime(29)	In format: YYYY-MM-DDThh:mm:ss.sss+zz:zz *E.g.*2023-08-01T15:04:48.000+08:00	M	M
author.reference	[resource.id] of Organization Resource who is the author of this composition *eHRSS will not interpret this value*	Reference(100)	In format: Organization/<resource id> *E.g.* "author": [{ "reference" : "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e"}] • This resource id is the same value of the Organization resource id	M	M
title	Title of this composition *eHR will not interpret this value*	string(33)	Fixed value: 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 Clinical notes/Summary records		
title	A human readable label for this section *eHR will not interpret this value*	string(255)	Fixed value: "**Clinical Note/Summary Records**"	M	M
code	The code to identify the section content				
coding.system	Link to data domain coding system	string(255)	In Format: "system": "**[eHR FHIR URL]**/datadomain",	M	M
coding.code	[Record type]	string(4)	Fixed value: "**EPIS**"	M	M
coding.display	The long name of the record key		Fixed value: "**Clinical Notes/Summary**"	M	M
section.entry	**Each entry represents each record			M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios
extension 99999999-TransactionType	[Transaction Type] Insert/Update/Delete of a Clinical Note/Summary Record identified by the [Record Key]	extension url string(1)	Permissible Values: **I**: Insert **U**: Update **D**: Delete ***Notes:*** • Insert ("I"): Upload a record which has never been uploaded to eHRSS before. • 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. • Delete ("D"): Delete a record which has been uploaded to eHRSS before and has since be cancelled or deleted. • DM mode only permits 'I' (Insert) • 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. *E.g:* "extension": [{ "url": "**[eHR FHIR URL]**/99999999-TransactionType", "valueDateTime": "**[Last Update Date Time]**" }]	M	M
extension 99999999-LastUpdateDateTime	[Last Update Date Time] The last update datetime of the HCP's EMR system	extension url dateTime(29)	In format: YYYY-MM-DDThh:mm:ss.sss+zz:zz *E.g:* "2023-08-31T08:30:00.000+08:00" *E.g:* "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)	In format: YYYY-MM-DDThh:mm:ss.sss+zz:zz *E.g.* "2023-08-02T08:30:00.000+08:00" *E.g.* "extension": [{ "url": "**[eHR FHIR URL]**/99999999-TransactionDateTime", "valueDateTime": "**[Transaction Date Time]**" }]	M	M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios
extension 99999999-ComplianceLevel	[Compliance Level]	extension url string(1)	Permissible Values: 1 *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)	Fixed value: "eHRSS-1.4.0" E.g.{ "url": "**[eHR FHIR URL]**/99999999-DomainVersion", "valueString": "**eHRSS-1.4.0**"}	M	M
extension 99999999-UploadMode	[Upload Mode]	extension url string(5)	Permissible values: NBL: Non Bulk load E.g. { "url": "**[eHR FHIR URL]**/99999999-UploadMode", "valueString": "**NBL**"}	M	M
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
99999999-RecordCreateDatetime	[Record Create Datetime] Datetime when the record was created in the source system of the HCP	extension url dateTime(29)	In format: YYYY-MM-DDThh:mm:ss.sss+zz:zz *E.g.*"2023-08-02T08:30:00.000+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)	Fixed length:10 *E.g.* "extension": [{ "url": "**[eHR FHIR URL]**/99999999-RecordCreateInstIdentifier", "valueString": "**[Record Create Institution Identifier]**" }]	O	NA

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios
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)	In format: YYYY-MM-DDThh:mm:ss.sss+zz:zz E.g. 2023-08-02T08:30:00.000+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)	Fixed length:10 *E.g.* "extension": [{ "url": "**[eHR FHIR URL]**/99999999-RecordCreateInstIdentifier", "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)	*E.g.* "extension": [{ "url": "**[eHR FHIR URL]**/99999999-RecordUpdateInstName", "valueString": "**[Record Update Institution Name]**" }]	O	NA
reference.DocumentReference	[resource.id] of DocumentReference Resource included in the same bundle **Each entry represents each record	Reference (100)	In Format: DocmentReference/<resource id> This resource id is the same value of DocumentReference resource id	M	NA
identifier.system	Link to record key coding system	string(255)	In format: "**[HCP FHIR URL]**/Recordkey"	M	M
Identifier.value	[Record key] of the Clinical notes/summary record	string(50)		M	M

5.3.2 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
resourceType	Resource name	string (12)	Fixed value: **“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]	string (255)		M	M

5.3.3 Data Elements in the Patient Resource

The Patient Resource provides the patient identifier referenced in the other Resources to identify the patient whom these EPIS data belong 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 EPIS 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. 201000000001	M	M
identifier	Document type and HKIC for this patient	identifier			
type.coding.system	Link to document type coding system	string(255)	Fixed value:"**[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	sFHIR Data Type (Max Length)	Remarks	M/O	delete
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)	In Format: If [document type] is **ID, BC, CD, ECID,** format of the document number is: AANNNNNNC or ANNNNNNC where: • C is the check digit • All Uppercase	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)	Mandatory if [name.text] and [name.give] are blank; else Optional • All Uppercase letters	M*	M*
given	[English given name] Patient's given name in English	string(40)	Mandatory if [name.text] and [name.family] are blank; else Optional • All Uppercase letters	M*	M*
text	[English full name] Patient's full name in English	string(100)	Mandatory if [name.family] and [name.given] are blank;else Optional In format: [name.family] + [,] + 1 white space + [name.given] • All Uppercase letters • If HCR has either English surname or given name stored in local EMR system, full name should be filled.	M*	M*
gender	[sex] Gender of the patient eHR will convert the FHIR gender to eHR [Sex] according to the Section 8 Mapping table	code(7)	Permissible Values: - male - female - unknown *E.g.*: "gender": "**[Sex]**"	M	M
birthdate	[Date of birth] Date of birth of the patient as indicated on the patient's identity document	date(10)	In format: YYYY-MM-DD *E.g.*: "birthDate": "**[Date of birth]**" If date is exact to 'Year' (e.g. 2010), the unknown month and day should be filled with '01-01'. Example: "2010-01-01". If date is exact to 'Month' (e.g. 2011-12), the unknown day should be filled with '01'. Example: "2011-12-01".	M	M

5.3.4 Data Elements in the DocumentReference resource

The information about the details for the Clinical notes/Summary record.

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 M/O	Delete Scenario
resourceType	Resource name	string(17)	Fixed Value: "**DocumentReference**"	M	NA
id	[resource id] reference by Composition resource A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string (45)		M	NA
extension 1003357-EPISRemarks	[Clinical note / summary remark] The additional information about the clinical note / summary	extension url string(255)	E.g. {"url": "**[eHR FHIR URL]** /1003357-EPISRemarks", "valueString": "**[Clinical note / summary remark]** "}	O	NA
extension 1003355-EPISreportText	[Clinical note / summary report (Text)] Clinical note / summary report in text format	extension url string(32767)	Mandatory if [Clinical note / summary report (PDF)] is blank E.g. "url": "**[eHR FHIR URL]**/1003355-EPISreportText", "valueString": "**[Clinical note / summary report (Text)]** "}	M*	NA
identifier	[Referral number] A unique identifier issued by the healthcare institution who referred the healthcare recipient to the performing / visited institution. This number will be served as a part of the eReferral number for eReferral	string(20)		O	NA
status	This is FHIR Code to identify the status of the EPIS records current | superseded | entered-in-error	string(7)	Fixed value: **current**	M	NA
type.coding.code	[Report entity identifier] eHR value defined in "Clinical report list" codex. A unique identifier issued by eHR ISO for indicating the specific kind of clinical notes / investigation reports sharing to eHRSS. This identifier will be used for facilitating reports searching or filtering in eHR viewer	string(20)	Refer to the code set "Clinical report list" in **Self-Service Kit**. The latest code set in eHealth website shall prevail.	M	NA
category	Type of clinical setting				

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 M/O	Delete Scenario
coding.system	Link to document type coding system	string(255)	In format: "**[eHR FHIR URL]**/TypeOfClinicalSetting"	M	NA
coding.code	[Type of clinical setting code] eHR value defined in "Clinical report list" codex. A unique identifier issued by eHR ISO for indicating the specific kind of clinical notes / investigation reports sharing to eHRSS. This identifier will be used for facilitating reports searching or filtering in eHR viewer	string(20)	Permissible values: **AE** : Accident and emergency record **OP** : Outpatient record **IP** : Inpatient record **OTH** : Other record Refer to the code set "Clinical report list" in **Self-Service Kit**. The latest code set in eHealth website shall prevail.	M	NA
coding.display	[Type of clinical setting description] eHR description defined in "Type of clinical setting" code table, it should be the corresponding description of the selected [Type of clinical setting code]. Type of clinical setting is the type of clinical service, e.g. inpatient, outpatient, under which the health record is created	string(255)	Refer to the code set "Clinical report list" in **Self-Service Kit**. The latest code set in eHealth website shall prevail.	M	NA
text	[Type of clinical setting local description] The local description of the type of clinical setting which is the type of clinical service, e.g. inpatient, outpatient, under which the health record is created	string(255)		M	NA
description	[Clinical note / summary highlight] Summary of important information for the clinical note / summary, e.g. important findings	string(255)		O	NA
content	Clinical note / summary report content				
attachment.data	[Clinical note / summary report (PDF)] Clinical note / summary report in Portable Document Format (PDF)	base64Binary	Mandatory if [Clinical note / summary report (Text)] is blank <contentType value="application/pdf" />	M*	NA
attachment.url	[PDF file name] File name of the Clinical note / summary report in Portable Document Format (PDF)	string(255)	In format: Please refer the Section 6 Image file (PDF) name standard	M*	NA
attachment.title	[Clinical note / summary report title] Report title of the clinical note / summary	string(255)		M	NA

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 M/O	Delete Scenario
attachment.creation	[Clinical note / summary report date] The documentation date of the clinical note / summary report. If this documentation date is not available, use the report creation date	dateTime(29)	In format: YYYY-MM-DDThh:mm:ss.sss+zz:zz E.g."2023-02-02T00:00:00.000+08:00"	O	NA
context	Clinical note / summary record context				
Encounter	[resource.id] of Encounter Resource in the same bundle related to the DocumentResource resource	Reference(100)	In format: 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	NA
period.start	[Report start date] The start date of the period in which the clinical note/summary intended to cover. For example, this can be the admission date for inpatient episode	dateTime(29)	In format: YYYY-MM-DDThh:mm:ss.sss+zz:zz E.g."2023-01T31T00:00:00.000+08:00 "	M	NA
period.end	[Report end date] The end date of the period in which the clinical note/summary intended to cover. For example, this can be the discharge date for inpatient episode	dateTime(29)	In format: YYYY-MM-DDThh:mm:ss.sss+zz:zz E.g."2023-02-01T00:00:00.000+08:00	O	NA

5.3.5 Data Elements for the Encounter resource

The information about an encounter which is related to clinical notes/summary.

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	Delete Scenario
resourceType	Resource name	string(9)	Fixed Value: "**Encounter**"	M	NA
id	[resource id] reference by DocumentReference 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 EPIS 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	Delete Scenario
99999999-AttendanceInstIdentifier	[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 *E.g.* "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)	*E.g.*
			{
			"system": "**[HCP FHIR URL]**/EpisodeNum",
			"value": "**[Episode number]**"
			}
				O	NA

status	Encounter Status *eHRSS will not interpret the value*	code	Fixed Value : "**finished**"	M	NA
Class	Classification of patient encounter *eHRSS will not interpret the value*	Coding	Fixed Value: "class": { "system": "**[eHR FHIR URL]**/class", "code": "UNKNOWN", "display": "Unknown status"}	M	NA

6. 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 Clinical Note/Summary Data Domain is "**EPIS**"

E.g.

8088450656.BRANCHA.EPIS.EPIS-001.123.pdf.201000000001.20240802182400

1. The file name must be in capital letters except for the 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)	Fixed Length: 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. Format: 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. EPIS	M
4	Record Key	A unique identifier for a record within the HCP's EMR system	string(50)	e.g. EPIS-001	M
5	Original File Name	The fila 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)	Fixed length: 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

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.

Template:

```
{
    "resourceType": "Bundle",
    "id": "7c5e44e9-6ad5-4272-ace8-028051e19b19",
    "identifier": {
        "system": "urn:ietf:rfc:4122",
        "value": "d2f9f649-5555-4826-868b-84e015c1f1be"
    },
    "type": "document",
    "timestamp": "2023-12-11T14:30:00.000+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",
```

Comment

```
Bundle Resource
-[Resource id for
Bundle]



-[current time]


-[fullUrl for
Composition]
Composition Resource
```

<table>
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```
                "type": {
                    "coding": [
                        {
                            "system": "https://ehealth.gov.hk/FHIR",
                            "display": "Hong Kong eHR Healthcare Document"
                        }
                    ],
                    "text": "Hong Kong eHR Healthcare Document"
                },
                "subject": {
                    "reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616"
                },
                "date": "2023-02-02T00:00:00.000+08:00",
                "author": [
                    {
                        "reference": "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e"
                    }
                ],
                "title": "Hong Kong eHR Healthcare Document",
                "section": [
                    {
                        "title": "Clinical Notes/Summary Records",
                        "code": {
                            "coding": [
                                {
                                    "system": "http://ehealth.gov.hk/FHIR/datadomain",
                                    "code": "EPIS",
                                    "display": "Clinical Notes/Summary"
                                }
                            ],
                            "text": "Clinical Notes/Summary"
                        },
                        "entry": [
                            {
                                "extension": [
                                    {
                                        "url": "https://ehealth.gov.hk/FHIR/99999999-
LastUpdateDateTime",
                                        "valueDateTime": "2023-03-04T08:30:00.000+08:00"
                                    },
                                    {
                                        "url": "http://ehealth.gov.hk/FHIR/99999999-
TransactonType",
                                        "valueString": "I"
```

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Link to Patient Resource
- [Message generation time]

Link to Organization Resource

- [Last Update datetime]

- [Transaction type]

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},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-TransactionDateTime",
"valueDateTime": "2023-03-04T08:30:00.000+08:00"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-ComplianceLevel",
"valueString": "1"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-DomainVersion",
"valueString": "eHRSS-1.4.0"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-UploadMode",
"valueString": "NBL"
},
{
"url": " https://ehealth.gov.hk/FHIR/99999999-SendingLocation",
"valueString": "BRANCHA"
}
 	
{
"url": "https://ehealth.gov.hk/FHIR/99999999-RecordCreateDatetime",
"valueDateTime": "2023-03-04T08:30:00.000+08:00"
},
{
"url": " https://ehealth.gov.hk/FHIR/99999999-RecordCreateInstIdentifier",
"valueString": "8088450656"
},
{
"url": "https://ehealth.gov.hk//FHIR/99999999-RecordCreateInstName",
"valueString": "Hong Kong Hospital"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-RecordLastUpdateDatetime",
	- [Transaction datetime]
	
	- [Compliance level]
	
	Fixed value
	
	- [Upload mode]
	
	- [Sending location]
	
	- [Record creation datetime]
	
	- [Record creation institution identifier]
	
	- [Record creation institution name]

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<pre>
                                    "valueDateTime": "2023-03-04T08:30:00.000+08:00"
                                },
                                {
                                    "url": "https://ehealth.gov.hk/FHIR/99999999-
RecordUpdateInstIdentifier",
                                    "valueString": "8088450656"
                                },
                                {
                                    "url": "https://ehealth.gov.hk/FHIR/99999999-
RecordUpdateInstName",
                                    "valueString": "Hong Kong Hospital"
                                }

                            ],
                            "reference": "DocumentReference/1832473e-2fe0-452d-abe9-
3cdb9879522f",

                            "identifier": {
                                "system": "http://ehealth.gov.hk/FHIR/Recordkey",
                                "value": "EPIS-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": [
</pre>

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<td>

- [Record last update datetime]

- [Record update institution identifier]

- [Record update institution name]

Link to DocumentReference Resource

- [Record key]

[fullUrl for Organization]
Organization Resource
- [Resource id for Organization resource]
- [Healthcare institution long name]

[fullUrl for Patient]
Patient (HCR) Resource
- Resource id for Patient resource]

</td>
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```
                {
                    "type": {
                        "coding": [
                            {
                                "system": "https://ehealth.gov.hk/FHIR/typeofID-ext",
                                "code": "EHRNO"
                            }
                        ]
                    },
                    "value": "201000000001"
                },
                {
                    "type": {
                        "coding": [
                            {
                                "system": "https://ehealth.gov.hk/FHIR/typeofID-ext",
                                "code": "ID"
                            }
                        ]
                    },
                    "value": "Q1730351"
                }
            ],
            "name": [
                {
                    "text": "CHAN, MAN MAN",
                    "family":"CHAN",
                    "given": "MAN MAN"
                    ]
                }
            ],
            "gender": "female",
            "birthDate": "1974-12-25"
        }
    },

    {
        "fullurl": "DocumentReference/1832473e-2fe0-452d-abe9-3cdb9879522f",
        "resource": {
            "resourceType": "DocumentReference",
            "id": "1832473e-2fe0-452d-abe9-3cdb9879522f",
            "extension": [
                {
                    "url": "https://ehealth.gov.hk/FHIR/1003357-EPISRemarks",
```

</td>
<td>

- Fixed value

- [eHR Number]

- [Type of identity document]

- [Document number]

-

- English full name]
- [English surname]
- [English given name]

- [Sex]
- [Date of Birth]

[fullUrl for DocumentReference]
DocumentReference Resource
- [Resource id for DocumentReference resource]

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</table>

"valueString": "Pay special attention to eyes and liver"
},
{
"url": "https://ehealth.gov.hk/FHIR/1003355-EPISreportText"
}
],
"identifier": [
{
"system": "https://ehealth.gov.hk/FHIR/HCP/local/ReferralNo",
"value": "12900"
}
],
"status": "current",
"type": {
"coding": [
{
"code": "102103"
}
]
},
"category": [
{
"coding": [
{
"system": "https://ehealth.gov.hk/FHIR/TypeOfClinicalSetting",
"code": "IP",
"display": "In-patient record"
}
],
"text": "Hospitalisation record"
}
],
"description": "Fever for Ix",
"content": [
{
"attachment": {
"contentType": "application/pdf",
"data": "JVBERi0xLjcNCiW1tbW1DQoxIDAgb2JqDQo8PC9UeX==<Cover many lines>",
"url": "file:///8840188537.BRANCHA.EPIS.EPIS-001.123.pdf.201000000001.20230202000000",
"title": "Discharge summary",
"creation": "2023-03-04T00:00:00.000+08:00"
}
	- [Clinical note / summary remark]
	- [Clinical note / summary report (Text)]
	- [Referral Number]
	- [Report entity identifier]
	- [Type of clinical setting code]
	- [Type of clinical setting description]
	- [Type of clinical setting local description]
	- [Clinical note/ summary highlight]
	- [PDF in Base64]
	- [PDF file name]
	- [Clinical note / summary report title]
	- [Clinical note / summary report date]

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<pre>
                    }
                ],
                "context": {
                    "encounter": [
                        {
                            "reference": "Encounter/169281c8-fb76-4e9c-b30f-3dfb3a7f53f2"

                        }
                    ],
                    "period": {
                        "start": "2023-03-04T00:00:00.000+08:00",
                        "end": "2023-03-04T00:00:00.000+08:00"
                    }
                }
            }
        },
        {
            "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"
                    }
                ],
                "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>

</td>
<td>

Link to Encounter Resource

- [Report start date]
- [Report end date]

[fullUrl for Encounter]
Encounter Resource
- [Resource id for Encounter resource]

- [Attendance institution identifier]

- [Episode number]

</td>
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</table>

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証件	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/地區發出之旅遊証件	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

Type of clinical setting

eHR value	eHR Description	Definition
AE	Accident and emergency record	Record generated during receiving care in Accident and Emergency Department
OP	Outpatient record	Record generated during out-patient attendance
IP	Inpatient record	Record generated during inpatient care
OTH	Other record	Record generated with unidentified healthcare service type is received

10. Data variable

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

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

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

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