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eHealth

香港特別行政區政府 HKSARGOVT

Developers' Quick Guide
eHealth Allergy and Adverse Drug Reaction (Chinese Medicine System) Records (FHIR)

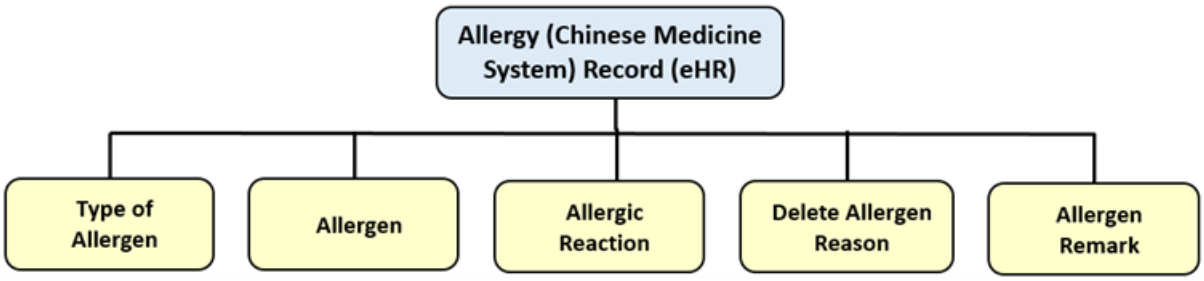
1 Contents

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 Allergy (Chinese Medicine System) 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 for Allergy (Chinese Medicine System)



Type of Allergen
An indicator of whether the allergen is drug related or not.

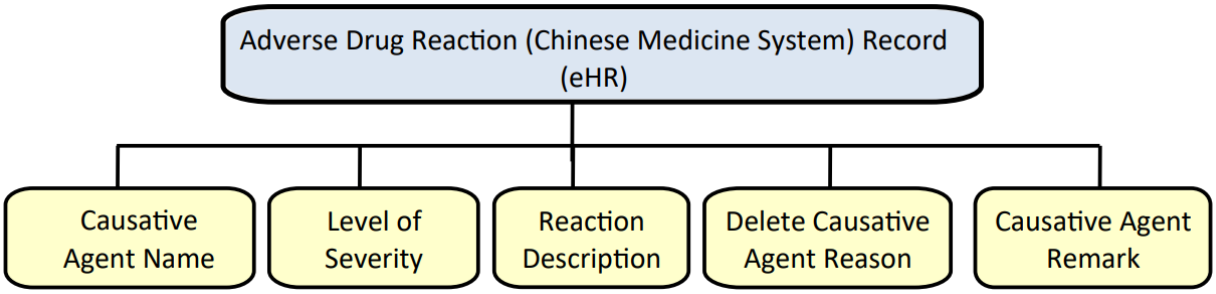
Allergen
Name of the reported allergen and the level of certainty of the allergen that would cause an allergic reaction.

Allergic Reaction
Description of the allergic reaction.

Delete Allergen Reason
Reason for deleting the reported allergen.

Allergen Remark
Additional information about the allergen.

3. Data Components for Adverse Drug Reaction (Chinese Medicine System)



Causative Agent Name
A description of Causative Agent for the reported Adverse Drug Reaction (Chinese Medicine System) (CMADR).

Level of Severity
The severity level of the CMADR.

Reaction Description
The descriptions of adverse drug reaction.

Delete Causative Agent Reason
The reason for deleting a reported adverse drug reaction causative agent.

Causative Agent Remark
The additional information about the causative agent of CMADR.

4. Upload Standards

Supported Data Standards Level

The Allergy (Chinese Medicine System) data domain (CMAL1) and Adverse Drug Reaction (Chinse Medicine System) (CMADR) data domain support Level 2 or Level 3 data standards and does not support Level 1 (text / PDF) data.

Examples of Allergy (CM) and Adverse Drug Reaction (CM) Scenarios
Below are the examples depicting the different details in Level 2 and Level 3 Allergy (Chinese Medicine System) records and Adverse Drug Reaction (Chinse Medicine System):

CMAL1 Data Field	Level 2 Data	Level 3 Data
Type of allergen code		Drug

CMAL1 Data Field	Level 2 Data	Level 3 Data
Type of allergen description		Drug allergen
Type of allergen local description	Unknown	Drug allergen
Allergen - recognised terminology name		HKCTT
Allergen identifier - recognised terminology		234556
Allergen description - recognised terminology		Panadol (paracetamol) oral tablet 500 mg
Allergen local code	abc	a1234
Allergen local description	Fish	Peni G
Level of certainty code		C
Level of certainty description		Certain
Level of certainty local description	Certain	Certain
Allergic reaction code		2
Allergic reaction description		Allergic rhinitis
Allergic reaction local description	皮疹	過敏性鼻炎
Delete allergen reason	abc	abc
Allergen remark	abc	abc

CMADR Data Field	Level 2 Data	Level 3 Data
Adverse drug reaction (Chinese Medicine System) causative agent - recognised terminology name		HKCTT
Adverse drug reaction (Chinese Medicine System) causative agent identifier - recognised terminology		9710022
Adverse drug reaction (Chinese Medicine System) causative agent description - recognised terminology		生地黃
Adverse drug reaction (Chinese Medicine System) causative agent local code	N/A	N/A
Adverse drug reaction (Chinese Medicine System) causative agent local description	製附子	生地
Adverse drug reaction (Chinese Medicine System) level of severity code		NS
Adverse drug reaction (Chinese Medicine System) level of severity description		非嚴重

CMADR Data Field	Level 2 Data	Level 3 Data
Adverse drug reaction (Chinese Medicine System) level of severity local description	輕微	輕微
Adverse drug reaction (Chinese Medicine System) description	咽痛、舌麻	噁心、嘔吐
Delete adverse drug reaction (Chinese Medicine System) causative agent reason	N/A	N/A
Adverse drug reaction (Chinese Medicine System) causative agent remark	N/A	N/A

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 Allergy (Chinese Medicine System) Records and Adverse Drug Reaction (Chinese Medicine System) Records upload to eHealth.
- Resource and Element names are case-sensitive

Encoding

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

5. 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
eHRSS AllergyIntolerance	This profile represents the constraints and localization applied to the Patient Resource by eHRSS.	1..*

Notes:

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

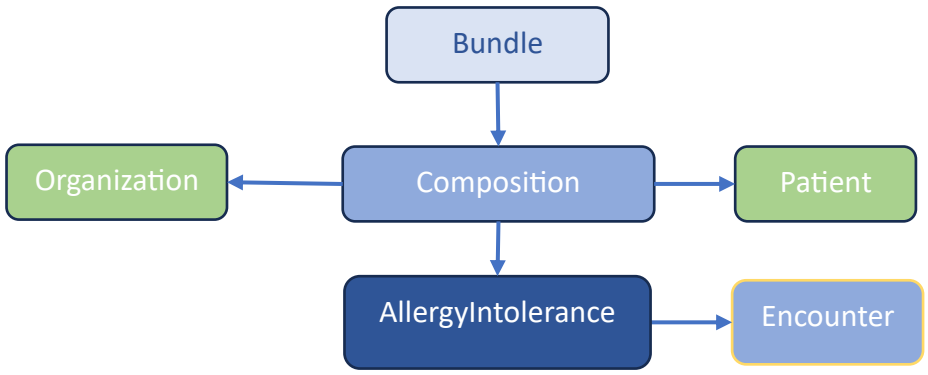
Constants:	***Bolded** values are constants or fixed values.*
E.g.:	*Example values for illustration.*
[…]:	*Data variables*
"…":	*Data values.*
"M/O"	*Indicates if the data field is Mandatory (M) or Optional (O). M* or O* denotes conditional Mandatory or Optional, please refer to Remarks for rules*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

6. 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.

6.1 Composition of HL7 FHIR Message

The Allergy (Chinese Medicine System) and Adverse drug reaction (Chinese Medicine System) 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 Allergy (Chinese Medicine System) records or Adverse drug reaction (Chinese Medicine System) records.

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

- Contains the demographics data of the healthcare recipient (HCR) who has the records related to.

AllergyIntolerance(Multiple occurrences for each **Bundle**)

- Contains the Allergy or ADR data (Chinese Medicine System)data of the healthcare recipient (HCR)

6.2 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.

6.3 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'	string(100)	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 Allergy (Chinese Medicine System) or Adverse drug reaction (Chinese Medicine System) record upload Bundle include: • Composition • Organization • Patient • AllergyIntolerance • 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

6.3.1 Data Elements in the Composition Resource

The Composition Resource identifies whether the upload package includes a list of Allergy (Chinese Medicine System) or ADR (Chinese Medicine System)records in this bundle. HCP is required to provide the record keys associated with each CMAL1 or CMADR records submitted. The record key is used to insert/update/delete a record in eHRSS

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	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	*E.g.* 30551ce1-5a28-4356-b684-1e639094ad4d	M	M
extension 99999999-DomainVersion	[Domain version] The version of this interface	url string(11)	Fixed value: "eHRSS-1.1.0" E.g.{ "url": "**[eHR FHIR URL]**/99999999-DomainVersion", "valueString": " **eHRSS-1.1.0**"} For CMAL1 : eHRSS-1.1.0 For CMADR : eHRSS-1.1.0	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: 2,3 *E.g.* "extension": [{ "url": "**[eHR FHIR URL]**/99999999-ComplianceLevel", "valueString": "**[Compliance Level]**" }]	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
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

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

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios
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 AllergyIntolerance resource(s) in this bundle with related record key		The entry is repeatable for multiple Allergy or ADR (Chinese Medicine System) records		
title	A human readable label for this section *eHR will not interpret this value*	string(255)	Fixed value: "**Allergy (Chinese Medicine System) Records**" Or "**Adverse Drug Reaction (Chinese Medicine System) 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] For Allergy (Chinese Medicine System) records, the code is always “CMAL1” For Adverse Drug Reaction (Chinese Medicine System) Records, the code is always “CMADR”	string(4)	Permissible values: "**CMAL1**" "**CMADR**" e.g { "system": "**[eHR FHIR URL]**/datadomain", "code": "**CMAL1**" }]}	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 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
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
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-RecordUpdateInstIdentifier", "valueString": "**[Record Update Institution Identifier]**" }]	O	NA
extension 99999999-RecordUpdateInstName	[Record Update Institution Name] Name of healthcare institution where the record was updated	extension url string(255)	*E.g.* "extension": [{ "url": "**[eHR FHIR URL]**/99999999-RecordUpdateInstName", "valueString": "**[Record Update Institution Name]**" }]	O	NA

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	M/O	Delete scenarios
reference.AllergyIntolerance	[resource.id] of AllergyIntolerance Resource included in the same bundle **Each entry represents each record	Reference (100)	In Format: AllergyIntolerance /<resource id> This resource id is the same value of AllergyIntolerance 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 CMAL1 or CMADR record	string(50)		M	M

6.3.2 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

6.3.3 Data Elements in the Patient Resource

The Patient Resource provides the patient identifier referenced in the other Resources to identify the patient whom these CMADR or CMAL1 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

JSON Name	Data Field	sFHIR Data Type (Max Length)	Remarks	M/O	delete
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
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*

JSON Name	Data Field	sFHIR Data Type (Max Length)	Remarks	M/O	delete
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

6.3.4 eHRSS AllergyIntolerance

The information about an individual who has Allergy or Intolerance. There are two eHR defined dataset: Allergy (Chinese Medicine System) Records and Adverse Drug Reaction (Chinese Medicine System) Records. Both of them would use AllergyIntolerance Resource and the details mapping will be see in below two tables

6.3.5 eHRSS AllergyIntolerance for CMAL1

JSON Name	Data Value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario
AllergyIntolerance	Allergy or Intolerance	DomainResource	Fixed Value: "resourceType":"**AllergyIntolerance**"	M	M	M

JSON Name	Data Value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario
id	Logical id of this artifact This id is used to link up the related resources A UUID represented as a URI (RFC 4122);	uuid	E.g. 947a8c5c-3ef2-46ba-b819-e2c6d936d75e	M	M	M

identifier	[Record key]
	A unique identifier for each CMAL1 record
		string(40)	This [Record Key] is reference to the same [Record Key] in Composite Resource entry
			
			"identifier": {
			"system": "**[HCP FHIR URL]**/Recordkey",
			"value": "**[Record key]**"
			}
				M	M	M

clinicalStatus	active | inactive | resolved	Codeable Concept	Permissible values: **active** : without [Delete allergen reason] **inactive**: with [Delete allergen reason]	O	O	O
type	allergy |intolerance	string(7)	Fixed value: **allergy**	M	M	M

verificationStatus	AllergyIntolerance Verification Status	Codeable Concept	*E.g.*
			{
			"coding": {
			"system":"**[eHR FHIR URL]** / LevelofCertainty",
			"code": "**[Level of certainty code]**",
			"display": "**[Level of certainty description]**"
			},
			"text": "**[Level of certainty local description]**"
			}
				O	O	NA

coding.system	Link to Level of certainty code coding system	uri	Fixed value:"**[eHR FHIR URL]/ LevelofCertainty**"	O	O	NA
coding.code	[Level of certainty code] It is for identifying the level of certainty of an allergen which can cause an allergic reaction.	string(2)	Permissible values: • S : Suspected • C : Certain	NA	O	NA

JSON Name	Data Value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario
coding.display	[Level of certainty description] It is for identifying the level of certainty of an allergen which can cause an allergic reaction. It is the corresponding description of the selected [Level of certainty code].	string(255)	Mandatory if [Level of certainty code] is given, else N/A Permissible values • Suspected • Certain	NA	M*	NA
coding.text	[Level of certainty local description] Local description created by the healthcare provider for the level of certainty of an allergen which can cause an allergic reaction.	string(255)	Mandatory if [Level of certainty code] is given, else Optional.	O	M*	NA
type	allergy | intolerance - Underlying mechanism (if known)	code	Fixed Value: **allergy**	M	M	M
code	Code that identifies the allergy or intolerance	Codeable Concept		NA	M	NA

coding.system	[Allergen - recognised terminology name]
	Name of the recognised terminology set for the reported allergen
		uri	For HKCTT, fixed uri:
			https://ehealth.gov.hk/FHIR/HKCTT
			For RPP, fixed uri:
			https://ehealth.gov.hk/FHIR/RPP
			E.g.
			{
			"system": "**[uri for Allergy - recognised terminology name]**",
			"code": "**[Allergen identifier - recognised terminology]**",
			"display": "**[Allergen description - recognised terminology]**"
			}
				NA	M	NA

coding.code	[Allergen identifier - recognised terminology] Unique identifier in the recognised terminology for the reported allergen	string(20)	e.g. 7002240 (for HKCTT)	NA	M	NA

JSON Name	Data Value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario
coding.display	[Allergen description - recognised terminology] Description in the recognised terminology for the reported allergen	string(2000)	For HKCTT, use [eHR Description] or [Concept Full Description] e.g. Penicillins For RPP, use [Product Name]	NA	M	NA

coding.system	Link to coding system	uri	Fixed uri:
			{
			"system":"**[HCP FHIR URL]**/allergenCode",
			"code": "**[Allergen local code]**",
			"display": "**[Allergen local description]**"
			}
				M	M	NA

coding.code	[Allergen local code] Local code created by the healthcare provider for the reported allergen	string(20)		O	O	NA
coding.display	[Allergen local Description] Local description created by the healthcare provider for the reported allergen	string(255)		M	M	NA

patient.reference	Who the sensitivity is for	Reference(100)	<u>In format:</u>
			Patient/<resource id>
			
			This resource id is the same value of the Patient resource id
			
			E.g.
			"subject": {
			"reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616"
			}
			
			Refer to the section 6.3.3 eHRSS patient
				M	M	M

JSON Name	Data Value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario

encounter.reference	Encounter when the allergy or intolerance was asserted	Reference(100)	In format: Encounter/<resource id>
			
			This resource id is the same value of the Encounter resource id
			
			E.g.
			"encounter": {
			"reference": "Encounter/169281c8-fb76-4e9c-b30f-3dfb3a7f53f2"
			}
			
			Refer to the section 6.3.7 eHRSS Encounter
				O	O	NA

reaction		Codeable Concept		O	O	NA

manifestation.text	Link to Allergic reaction code coding system	string (255)	*E.g.*
			"coding": {
			"system": "**[eHR FHIR URL]**/AllergyReaction",
			"code": "**[Allergic reaction code]**",
			"display": "**[Allergic reaction description]**"
			},
			"text": "**[Allergic reaction local description]**"
			}
				NA	O	NA

coding.display	[Allergic reaction description] It includes the common hypersensitivity response of the immune system to a substance, situations, or physical states. It should match with the selected [Allergic reaction code].	string(255)	Mandatory if [Allergic reaction code] is given, else N/A. e.g. Rash Refer to the [eHR description] of code set of "Allergic reaction" in Self-Service kit. The latest code set in eHealth website shall prevail.	NA	M*	NA

JSON Name	Data Value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario
text	[Allergic reaction local description] Local description created by the healthcare provider for the allergic reaction	string (255)	Mandatory if [Allergic reaction code] is given, else Optional.	O	M*	NA
note	[Allergen remark] Additional information about the allergen	string (255)	*E.g.* "text": "**[Allergen remark]**"	O	O	NA
1003138-Typeofallergencode	[Type of allergen code] It is to indicate whether the allergen is drug related or not.	string (20)	Permissible values • Drug • Non-drug • Unclassify Refer to the [eHR value] of code set of "Type of allergen" in Self-Service kit. The latest code set in eHealth website shall prevail.	NA	O	NA
1003139-TypeofAllergenDesc	[Type of allergen description] It should be the corresponding description of the selected [Type of allergen code].	string (255)	Mandatory for Level 3 if [Type of allergen code] is given, else N/A. Permissible values: • Drug allergen • Non-drug allergen • Unclassify type of allergen Refer to the [eHR description] of code set of "Type of allergen" in Self-Service kit. The latest code set in eHealth website shall prevail.	NA	M*	NA
1003140-TypeofAllergenLocalDesc	[Type of allergen local description] Local description created by the healthcare provider for reporting the type of allergen. Type of allergen is to indicate whether the allergen is drug related or not.	string (255)	Mandatory if [Type of allergen code] is given, else Optional.	O	M*	NA
1003145-DeleteAllergyReason	[Delete allergen reason] Reason for deleting a reported allergen	string (255)	*Remarks: if 'Delete allergen reason' is uploaded in 'Insert' or 'Override' scenario, the whole record will be rejected*	NA	NA	O*

6.3.6 eHRSS AllergyIntolerance for CMADR

JSON Name	Data value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario
AllergyIntolerance	Allergy or Intolerance	DomainResource	Fixed Value: "resourceType":"**AllergyIntolerance**"	M	M	M
id	Logical id of this artifact This id is used to link up the related resources A UUID represented as a URI (RFC 4122);	uuid	E.g. 947a8c5c-3ef2-46ba-b819-e2c6d936d75e	M	M	M

identifier	[Record key]
	A unique identifier for each CMADR record
		string(40)	This [Record Key] is reference to the same [Record Key] in Composite Resource entry
			
			"identifier": {
			"system": "**[HCP FHIR URL]**/Recordkey",
			"value": "**[Record key]**"
			}
				M	M	M

clinicalStatus	Possible values active | inactive | resolved	Codeable Concept	Fixed value: **active**: without [Delete adverse drug reason causative agent reason] **inactive**: with [Delete adverse drug reaction causative agent reason]	M	M	M
type	allergy | intolerance -	code	Fixed Value: **intolerance**	M	M	M

JSON Name	Data value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario

code	Code that identifies the allergy or intolerance	Codeable Concept	e.g
			{
			"system": "**[uri for Adverse drug reaction (Chinese Medicine System) causative agent - recognised terminology name]**",
			"code": "[**Adverse drug reaction (Chinese Medicine System) causative agent identifier - recognised terminology**]",
			"display": "[**Adverse drug reaction (Chinese Medicine System) causative agent identifier - recognised terminology**]"
			}
				M	M	NA

coding.system	[Adverse drug reaction (Chinese Medicine System) causative agent - recognised terminology name] Name of the recognized terminology for the reported Chinese medicines adverse drug reaction causative agent.	uri	For HKCTT, fixed uri: https://ehealth.gov.hk/FHIR/HKCTT For pCM, fixed uri: https://www.ehealth.gov.hk/FHIR/pCm If eHR value = HKCTT, allowable nature is "原藥材" or "中藥產品". If eHR value = pCm, all records allowed	NA	M	NA
coding.code	[Adverse drug reaction (Chinese Medicine System) causative agent identifier - recognised terminology] Unique identifier in the recognised terminology for the reported Chinese medicines adverse drug reaction causative agent. It should be included in the selected recognised terminology of the "Recognised terminology name - pharmaceutical product" code table.	string(20)	e.g. 9710022 (for HKCTT) Refer to the code set of "Recognised terminology name - Chinese medicines adverse drug reaction causative agent" in Self-Service kit. The latest code set in eHealth website shall prevail.	NA	M	NA

JSON Name	Data value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario
coding.display	[Adverse drug reaction (Chinese Medicine System) causative agent description - recognised terminology] Description in the recognised terminology for the reported Chinese medicines adverse drug reaction causative agent.	string(100)	For HKCTT, use [eHR Description] or [Concept Full Description] e.g. 生地黃 For pCm, use [Product Name]	NA	M	NA
coding.system	Link to coding system	uri	*E.g.* { "system": "**[HCP FHIR URL]**/causativeAgent", "code": "**[Adverse drug reaction (Chinese Medicine System) causative agent local code]**", "display": "**[Adverse drug reaction (Chinese Medicine System) causative agent local description]**]"}	M	M	NA
coding.code	[Adverse drug reaction (Chinese Medicine System) causative agent local code] Local code created by the healthcare provider for the reported Chinese medicines adverse drug reaction causative agent.	string(20)		O	O	NA
coding.display	[Adverse drug reaction (Chinese Medicine System) causative agent local description] Local description developed by the healthcare organisation for the reported Chinese medicines adverse drug reaction causative agent.	string(255)		M	M	NA

patient.reference	Who the sensitivity is for	Reference (100)	<u>In format:</u>
			Patient/<resource id>
			
			This resource id is the same value of the Pateint resource id
			
			E.g.
			"subject": {
			"reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616"
			}
			
			Refer to the section 6.3.3 eHRSS patient
				M	M	M

JSON Name	Data value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario

encounter.reference	Encounter when the allergy or intolerance was asserted	Reference (100)	In format:
			Encounter/<resource id>
			
			"encounter": {
			"reference": "Encounter/169281c8-fb76-4e9c-b30f-3dfb3a7f53f2"
			}
			
			Refer to the section 6.3.7 eHRSS Encounter
				O	O	NA

reaction
 	
manifestation
	[Adverse drug reaction (Chinese medicine system) description]
	Description of the adverse drug reaction
		Codeable Concept
		text
		string(255)
			E.g.
			"text": {
			"value": "**[Adverse drug reaction (Chinese medicine system) description]**"
			}
				O	O	NA

description	[Adverse drug reaction (Chinese medicine system) description
	]
	Description of the adverse drug reaction
		string(255)	*E.g.*
			"description": {
			"value": "**[Adverse drug reaction (Chinese medicine system) description]**"
			}
				O	O	NA

note	[Adverse drug reaction (Chinese Medicine System) causative agent remark] The additional information about the causative agent of adverse drug reaction reported by Chinese Medicines system.	string(255)	*E.g.* "text": "**[Adverse drug reaction (Chinese Medicine System) causative agent remark]**"	O	O	NA

JSON Name	Data value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario

extension 1006712-CMLevelofSeverity	Adverse drug reaction (Chinese medicine system) level of severity	Codeable Conceptcode	"extension": [
			{
			"url": "**[EHR FHIR URL]**/1006712-CMLevelofSeverity",
			"valueCodeableConcept": {
			"coding": [
			{
			"system": "**[EHR FHIR URL]**/CMLevelofSeverity",
			"code": "**[Adverse drug reaction (Chinese medicine system) level of severity code]**",
			"display": "**[Adverse drug reaction (Chinese Medicine System) level of severity description]**"
			}
			],
			"text": "**[Adverse drug reaction (Chinese Medicine System) level of severity description]**"
			}
			}]
				O	O	NA

coding.System	Link to coding system of [Adverse drug reaction (Chinese medicine system) level of severity code]	uri	"url": "**[EHR FHIR URL]**/1006712-CMLevelofSeverity"	O	O	NA
coding.code	[Adverse drug reaction (Chinese medicine system) level of severity code] It is the severity level of the adverse drug reaction reported by Chinese medicine System.	string(2)	Permissible values: **NS** : Non-severe **S** : Non-severe	NA	O	NA
coding.display	[Adverse drug reaction (Chinese Medicine System) level of severity description] It should be the corresponding description of the selected [Adverse drug reaction (Chinese Medicine System) level of severity code]. Adverse drug reaction (Chinese Medicine System) severity level is the severity level of the adverse drug reaction.	string(20)	Mandatory for Level 3 if [Level of severity code] is given, else N/A. Refer to the code set "Chinese Medicines Adverse drug reaction severity level" in Self-Service kit. The latest code set in eHealth website shall prevail.	NA	M*	NA

JSON Name	Data value	FHIR Data Type	Remarks	L2 Card.	L3 Card.	Delete Scenario
text	[Adverse drug reaction (Chinese Medicine System) level of severity local description] Local description created by the healthcare provider for the severity level of the adverse drug reaction.	string(100)	Mandatory in for Level 3 if [Level of severity code] is given, else Optional.	O	M*	NA
1006716-deleteCMADRcausativeAgentReason	[Delete adverse drug reaction (Chinese Medicine System) causative agent reason] Reason for deleting a causative agent of adverse drug reaction reported by Chinese Medicine system.	string(255)	***Remarks:*** *if 'Delete adverse drug reaction causative agent reason' is uploaded in 'Insert' or 'Override' scenario, the whole record will be rejected*	NA	NA	O

6.3.7 Data Elements for the Encounter resource

The information about an encounter which is related to Allergy or Adverse drug reaction.

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 AllergyIntolerance 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
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

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	Delete Scenario
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

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 CMAL1:

<pre>{
"resourceType": "Bundle",
"id": "[Resource id for Bundle]",
"identifier": {
"system": "urn:ietf:rfc:4122",
"value": "d2f9f649-5555-4826-868b-84e015c1f1be"
},
"type": "document",
"timestamp": "[current time]",
"entry": [
{
"fullUrl": "Composition/[resource id for Composition]",
"resource": {
"resourceType": "Composition",
"id": "[resource id for Composition]",
"extension": [
{
"url": "https://ehealth.gov.hk/FHIR/99999999-SendingLocation",
"valueString": "[Sending location]"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-ComplianceLevel",
"valueString": "[Compliance level]"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-DomainVersion",
- "valueString": "[Domain version]"
},</pre>
	Comment
	
	Bundle Resource
	-[Resource id for Bundle]
	
	[current time]
	
	-[fullUrl for Composition]
	Composition Resource
	
	- [Sending location]
	
	- [Compliance level]
	
	- [Domain version]

<pre>{
"url": "https://ehealth.gov.hk/FHIR/99999999-UploadMode",
"valueString": "**[Upload mode]**"
}
],
 	
"status": "final",
"type": {
"coding": [
{
"system": "https://ehealth.gov.hk/FHIR",
"display": "Hong Kong eHR Healthcare Document"
}
]
},
"subject": [
{
"reference": "Patient/**[resource id for Patient]**"
}
],
"date": "**[Message generation time]**",
"author": [
{
"reference": "Organization/**[resource id for Organization]**"
}
],
"title": "Hong Kong eHR Healthcare Document",
"section": [
{
"title": "Allergy (Chinese Medicine System) Records",
"code": {
"coding": [
{
"system": "https://ehealth.gov.hk/FHIR/datadomain",
"code": "CMAL1",
}
]
},
"entry": [
{
"extension": [
{
"url": "https://ehealth.gov.hk/FHIR/99999999-
RecordCreateDatetime",</pre>
	- [Upload mode]
	
	Link to Patient Resource
	- [Message generation time]
	
	Link to Organization Resource
	
	- [Record creation datetime]

- "valueDateTime": "**[Record creation datetime]**" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-RecordCreateInstIdentifier", "valueString": "**[Record creation institution identifier]**" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-RecordCreateInstName", "valueString": "**[Record creation institution name]**" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-RecordLastUpdateDatetime", "valueDateTime": "**[Record last update datetime]**" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-RecordUpdateInstIdentifier", "valueString": "**[Record update institution Identifier]**" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-RecordUpdateInstName", "valueString": "**[Record update institution name]**" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-TransactionDateTime", "valueDateTime": "**[Transaction datetime]**" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-TransactonType", "valueString": "**[Transaction type]**" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-LastUpdateDateTime", "valueDateTime": "**[Last Update datetime]**" },	- [Record creation institution identifier] - [Record creation institution name] -[Record last update datetime] - [Record update institution Identifier] - [Record update institution name] - [Transaction datetime] - [Transaction type] - [Last Update datetime]

`],`
`"reference": "AllergyIntolerance/[Resource id for AllergyIntolerance]",`
`"identifier": {`
`"system": "https://ehealth.gov.hk/FHIR/HCP/local/Recordkey",`
`"value": "[Record key]"`
`}`
`}`
`]`
`}`
`]`
`}`
`},`
`{`
`"fullUrl": "Organization/[Resource id for Organization]",`
`"resource": {`
`"resourceType": "Organization",`
`"id": "[Resource id for Organization]",`
`"name": "[Healthcare institution long name]"`
`}`
`},`
`{`
`"fullUrl": "Patient/[Resource id for Patient]",`
`"resource": {`
`"resourceType": "Patient",`
`"id": "[Resource id for Patient]",`
`"identifier": [`
`{`
`"type": {`
`"coding": [`
`{`
`"system": "https://ehealth.gov.hk/FHIR/typeofID-ext",`
`"code": "EHRNO"`
`}`
`]`
`},`
`"value": "[eHR Number]"`
`},`
`{`
`"type": {`
`"coding": [`
`{`
`"system": "https://ehealth.gov.hk/FHIR/typeofID-ext",
	Link to AllergyIntolerance 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]
	
	- Fixed value
	
	- [eHR Number]

"code": "[Type of identity document]" }] }, "value": "[Document number]" }], "name": [{ "text": "[English full name]", "family": "[English Surname], "given": ["[English given name]"] }], "gender": "[Sex]", "birthDate": "[Date of Birth]" } }, { "fullUrl": "AllergyIntolerance/[Resource id for AllergyIntolerance]", "resource": { "resourceType": "AllergyIntolerance", "id": "[Resource id for AllergyIntolerance]", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/1003138-Typeofallergencode", "valueString": "[Type of allergen code]" }, { "url": "https://ehealth.gov.hk/FHIR/1003139-TypeofAllergenDesc", "valueString": "[Type of allergen description]" }, { "url": "https://ehealth.gov.hk/FHIR/1003140-TypeofAllergenLocalDesc", "valueString": "[Type of allergen local description]" }, { "url": "https://ehealth.gov.hk/FHIR/1003145-DeleteAllergyReason", "valueString": "[Delete allergen reason]" }],	- [Type of identity document] - [Document number] - [English full name] - [English surname] - [English given name] - [Sex] - [Date of Birth] [fullUrl for AllergyIntolerance] AllergyIntolerance Resource - [Resource id for AllergyIntolerance resource] - [Type of allergen code] - [Type of allergen description] - [Type of allergen local description] - [Delete allergen reason]

<pre>"clinicalStatus": {
"coding": [
{
"code": "active"
}
]
},
"verificationStatus": {
"coding": [
{
"system": "https://eHealth.gov.hk/FHIR/LevelofCertainty",
"code": "**[Level of certainty code]**",
"display": "**[Level of certainty description]**"
}
],
"text": "**[Level of certainty local description]**"
},
"type": {
"value": "allergy"
},
"code": {
"coding": [
{
"system": "https://ehealth.org.hk/FHIR/HKCTT",
"code": "**[Allergen identifier recognized terminology]**",
"display": "**[Description in the recognised terminology for the reported allergen]**"
},
{
"system": "https://ehealth.gov.hk/FHIR/HCP/local/allergenCode",
"code": "**[Allergen local code]**",
"display": "**[Allergen local description]**"
}
]
},
"patient": {
"reference": "Patient/**[Resource id for Patient]**"
},
"encounter": {
"reference": "Encounter/**[Resource id for Encounter]**"
},
"reaction": [
{</pre>
	-[Level of certainty code]
	-[Level of certainty description]
	-[Level of certainty local description]
	-[Allergen - recognised terminology name]
	-[Allergen identifier recognized terminology]
	-[Description in the recognised terminology for the reported allergen]
	-[Allergen local code]
	-[Allergen local description]
	-Link to Patient resource
	-Link to Encounter resource

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"coding": [
{
"system": "https://ehealth.gov.hk/FHIR/Allergyreacton",
"code": "**[Allergic reaction code]**",
"display": "**[Allergic reaction description]**"
}
],
"text": "**[Allergic reaction local description]**"
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"note": [
{
"text": "**[Allergen remark]**"
}
]
}
]
}
},
{
	- [Allergic reaction code]
	- [Allergic reaction description]
	-[Allergic reaction local description]
	
	-[Allergen remark]

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"resourceType": "Encounter",
"id": "**[Resource id for Encounter]**",
"extension": [
{
"url": "https://ehealth.gov.hk/FHIR/99999999-AttendanceInstIdentifierc",
"valueString": "**[Attendance institution identifier]**"
}
],
"identifier": [
{
"system": "https://ehealth.gov.hk/FHIR/HCP/local/EpisodeNum",
"value": "**[Episode number]**"
}
],
"status": "finished",
"class": {
"system": "https://ehealth.gov.hk/FHIR/class",
"code": "UNKNOWN",
"display": "Unknown status"
	[fullUrl for Encounter]
	Encounter Resource
	- [Resource id for Encounter resource]
	
	- [Attendance institution identifier]
	
	- [Episode number]

} } }] }	

Template CMADR:

{
"resourceType": "Bundle",
"id": "[Resource id for Bundle]",
"identifier": {
"system": "urn:ietf:rfc:4122",
"value": "d2f9f649-5555-4826-868b-84e015c1f1be"
},
"type": "document",
"timestamp": "[current time]",
"entry": [
{
"fullUrl": "Composition/[resource id for Composition]",
"resource": {
"resourceType": "Composition",
"id": "[resource id for Composition]",
"extension": [
{
"url": "https://ehealth.gov.hk/FHIR/99999999-SendingLocation",
"valueString": "[Sending location]"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-ComplianceLevel",
"valueString": "[Compliance level]"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-DomainVersion",
"valueString": "[Domain version]"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-SendingLocation",
"valueString": "[Upload mode]"
 	
}
],
"status": "final",
"type": {
"coding": [
{
"system": "https://ehealth.gov.hk/FHIR",
"display": "Hong Kong eHR Healthcare Document"
}
	Comment
	
	Bundle Resource
	-[Resource id for Bundle]
	
	[current time]
	
	-[fullUrl for Composition]
	Composition Resource
	
	- [Sending location]
	
	- [Compliance level]
	
	-[Domain Version]
	
	- [Upload mode]

<pre>]
},
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{
"reference": "Patient/**[Resource id for Patient]**"
}
],
"date": "**[Message generation time]**",
"author": [
{
"reference": "Organization/**[Resource id for Organization]**"
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"title": "Hong Kong eHR Healthcare Document",
"section": [
{
"title": "Adverse Drug Reaction (Chinese Medicine System) Records",
"code": {
"coding": [
{
"system": "https://ehealth.gov.hk/FHIR/datadomain",
"code": "CMADR"
}
]
},
"entry": [
{
"extension": [
{
"url": "https://ehealth.gov.hk/FHIR/99999999-
RecordCreateDatetime",
"valueDateTime": "**[Record creation datetime]**"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-
RecordCreateInstIdentifier",
"valueString": "**[Record creation institution identifier]**"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-
RecordCreateInstName",
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},</pre>
	Link to Patient Resource
	
	- [Message generation time]
	
	Link to Organization Resource
	
	- [Record creation datetime]
	
	- [Record creation institution identifier]
	
	- [Record creation institution name]

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},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-RecordUpdateInstIdentifier",
"valueString": "**[Record update institution Identifier]**"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-RecordUpdateInstName",
"valueString": "**[Record update institution name]**"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-TransactionDateTime",
– "valueDateTime": "**[Transaction datetime]**"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-TransactonType",
"valueString": "**[Transaction type]**"
},
{
"url": "https://ehealth.gov.hk/FHIR/99999999-LastUpdateDateTime",
"valueDateTime": "**[Last Update datetime]**"
}
],
"reference": "AllergyIntolerance/**[Resource id for AllergyIntolerance]**",
"identifier": {
"system": "https://ehealth.gov.hk/FHIR/HCP/local/Recordkey",
"value": "**[Record key]**"
}
}
]
}
]
}
},
	-[Record last update datetime]
	
	- [Record update institution Identifier]
	
	- [Record update institution name]
	
	- [Transaction datetime]
	
	- [Transaction type]
	
	- [Last Update datetime]
	
	Link to AllergyIntolerance Resource
	
	- [Record key]

```
        {
            "fullUrl": "Organization/[Resource id for Organization]",
            "resource": {
                "resourceType": "Organization",
                "id": "[Resource id for Organization]",
                "name": "[Healthcare institution long name]"
        },
        {
            "fullUrl": "Patient/[Resource id for Patient]",
            "resource": {
                "resourceType": "Patient",
                "id": "[Resource id for Patient]",
                "identifier": [
                    {
                        "type": {
                            "coding": [
                                {
                                    "system": "https://ehealth.gov.hk/FHIR/typeofID-ext",
                                    "code": "EHRNO"
                                }
                            ]
                        },
                        "value": "[eHR Number]"
                    },
                    {
                        "type": {
                            "coding": [
                                {
                                    "system": "https://ehealth.gov.hk/FHIR/typeofID-ext",
                                    "code": "[Type of identity
document]"
                                }
                            ]
                        },
                        "value": "[Document number]"
                    }
                ],
                "name": [
                    {
                        "text": "[English full name]",
                        "family": "[English Surname],
                        "given": [
                            "[English given name]"
                        ]
                    }
```

[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]

- Fixed value

- [eHR Number]

- [Type of identity document]

- [Document number]

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

- [Sex]
- [Date of Birth]

],
"gender": "**[Sex]**",
"birthDate": "**[Date of Birth]**"
}
},
{
"fullUrl": "AllergyIntolerance/**[Resource id for AllergyIntolerance]**",
"resource": {
"resourceType": "AllergyIntolerance",
"id": "**[Resource id for AllergyIntolerance]**",
"extension": [
{
"url": "https://ehealth.gov.hk/FHIR/1006712-CMLevelofSeverity",
"valueCodeableConcept": {
"coding": [
{
"system": "https://ehealth.gov.hk/FHIR/CMLevelofSeverity",
"code": "**[Adverse drug reaction (Chinese Medicine System) level of severity code]**",
"display": "**[Adverse drug reaction (Chinese Medicine System) level of severity description]**"
}
],
- "text": "**[Adverse drug reaction (Chinese Medicine system) level of severity local description]**"
}
},
{
"url": "https://ehealth.gov.hk/FHIR/1006716-deleteCMADRcausativeAgentReason",
"valueString": "**[Delete adverse drug reaction (Chinese Medicine System) causative agent reason]**"
}
],
"clinicalStatus": {
"coding": [
{
"system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical",
"code": "active"
}
]
},
	[fullUrl for AllergyIntolerance]
	AllergyIntolerance Resource
	- [Resource id for AllergyIntolerance resource]
	
	- [Adverse drug reaction (Chinese Medicine System) level of severity code]
	
	- [Adverse drug reaction (Chinese Medicine System) level of severity description]
	- [Adverse drug reaction (Chinese Medicine system) level of severity local description]
	
	- [Delete adverse drug reaction (Chinese Medicine System) causative agent reason]
	
	-[Adverse drug reaction (Chinese Medicine System) causative agent - recognised terminology name]

<pre>"type": "intolerance",
"code": {
"coding": [
{
"system": "https://ehealth.org.hkk/FHIR/HKCTT",
"code": "**[Adverse drug reaction (Chinese Medicine System) causative agent identifier - recognised terminology]**",
"display": "**[Adverse drug reaction (Chinese Medicine System) causative agent description - recognised terminology]**"
},
{
"system": "https://ehealth.org.hkk/FHIR/HCP/local/causativeAgent",
"code": "**[Adverse drug reaction (Chinese Medicine System) causative agent local code]**",
"display": "**[Adverse drug reaction (Chinese Medicine System) causative agent local description]**"
}
]
},
"patient": {
"reference": "Patient/**[Resource id for Patient]**"
},
"encounter": {
"reference": "Encounter/**[Resource id for Encounter]**"
},
"reaction": [
{
"manifestation": [
{
"text": "**[Adverse drug reaction (Chinese Medicine System) description]**"
}
],
"description": "**[Adverse drug reaction (Chinese Medicine System) description]**",
"note": [
{
"text": "**[Adverse drug reaction (Chinese Medicine System) causative agent remark]**"
}
]
}
]</pre>
	-[Adverse drug reaction (Chinese Medicine System) causative agent identifier - recognised terminology]
	-[Adverse drug reaction (Chinese Medicine System) causative agent description - recognised terminology]
	
	-[Adverse drug reaction (Chinese Medicine System) causative agent local code]
	-[Adverse drug reaction (Chinese Medicine System) causative agent local description]
	
	Link to Patient resource
	
	Link to Encounter resource
	
	-[Adverse drug reaction (Chinese Medicine System) description]
	
	-[Adverse drug reaction (Chinese Medicine System) causative agent remark]

<pre>}
},
{
"fullUrl": "Encounter/[Resource id for Encounter]",
"resource": {
"resourceType": "Encounter",
"id": "[Resource id for Encounter]",
"extension": [
{
"url": "https://ehealth.gov.hk/FHIR/99999999-AttendanceInstIdentifier",
"valueString": "**[Attendance institution identifier]**"
}
],
"identifier": [
{
"system": "https://ehealth.gov.hk/FHIR/HCP/local/EpisodeNum",
"value": "**[Episode number]**"
}
],
"status": "finished",
"class": {
"system": "https://ehealth.gov.hk/FHIR/class",
"code": "UNKNOWN",
"display": "Unknown status"
}
}
}
]
}</pre>
	[fullUrl for Encounter]
	Encounter Resource
	- [Resource id for Encounter resource]
	
	- [Attendance institution identifier]
	
	- [Episode number]

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

AllergyIntolerance Resource: https://hl7.org/fhir/R4/allergyintolerance.html

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