醫健通

eHealth

香港特別行政區政府　HKSARGOVT

**Developers' Quick Guide**
**eHealth Chinese Medicine Procedure Records (FHIR)**
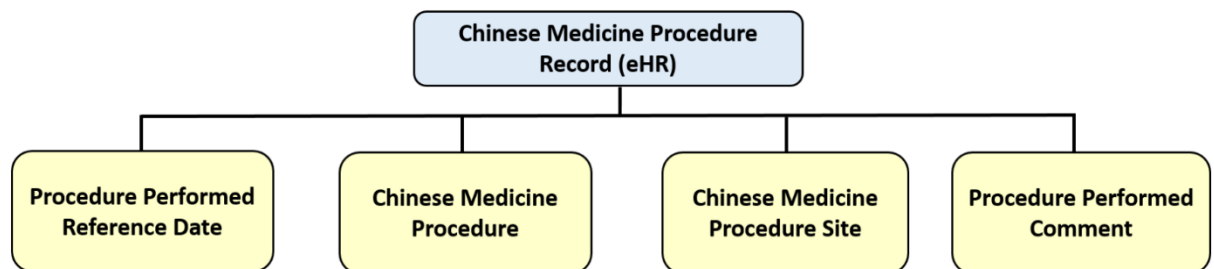
# 1    Contents

# 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 Chinese Medicine Procedure Records to eHRSS are provided below. Readers who prefer more in-depth study of the HL7 FHIR (R4) standards and content standards may refer to the HL7 FHIR website https://www.hl7.org/fhir/ and the **eHR Content Standards Guidebook** on the eHealth official website https://www.ehealth.gov.hk/ for more detail.

# 2. Data Components

**Chinese Medicine Procedure Performed Reference Date**
Date when the Chinese Medicine procedure was performed.

**Chinese Medicine Procedure**
It describes the recognised terminology/classification from which the Chinese Medicine procedure is referenced to:
- Chinese Medicine procedure performed recognised terminology
- Chinese Medicine procedure performed local terminology

**Chinese Medicine Procedure Site**
It describes the recognised terminology/classification from which the Chinese Medicine procedure site is referenced to:
- Chinese Medicine procedure site recognised terminology
- Chinese Medicine procedure site local terminology

**Chinese Medicine Procedure Performed Comment**
Comment made on the procedure performed.

## 3. Upload Standards

**Supported Data Standards Level**

The Chinese Medicine Procedure data domain (CMPX) supports Level 2 or Level 3 data standards and does not support Level 1 (text / PDF) data.

**Examples of Chinese Medicine Procedure Scenarios**

Below is an example depicting the different details in Level 2 and Level 3 Chinese Medicine Procedure records:

| Data Field | Level 2 data | Level 3 data |
|---|---|---|
| Chinese Medicine procedure performed reference date | 2023-01-31T16:30:05.005+08:00 | 2023-01-31T16:30:05.005+08:00 |
| Chinese Medicine procedure performed - recognised terminology name | | HKCTT |
| Chinese Medicine procedure performed identifier - recognised terminology | | 9730000 |
| Chinese Medicine procedure performed description - recognised terminology | | 毫針療法 |
| Chinese Medicine procedure performed local code | PP001 | T001 |
| Chinese Medicine procedure performed local description | 針法 | 毫針 |
| Chinese Medicine procedure site sequence number | 1 | 1 |
| Chinese Medicine procedure site - recognised terminology name | | HKCTT |
| Chinese Medicine procedure site identifier- recognised terminology | | 9740161 |
| Chinese Medicine procedure site description - recognised terminology | | 足三里 |
| Chinese Medicine procedure site local code | ST36 | ST36 |
| Chinese Medicine procedure site local description | 足三里 | 足三里 |
| Chinese Medicine procedure performed comment | 25 分鐘 | 25 分鐘 |

**Modes of Data Upload**

HCP can upload clinical data in TWO upload modes according to needs. Please refer to the relevant sections in the General Guide.

- **Data materialization (DM)** mode is to upload all of an HCR's clinical data of a specific sharable dataset (data domain) that exists in the EMR system to eHRSS. DM aims for the first data upload for an HCR who newly given sharing consent to the HCP; and

- **Incremental Load (INC)** mode is for HCP to upload all newly created, amended and cancelled clinical data of a specific sharable data from all HCRs in the EMR system to eHRSS in ONE batch since the last data upload.

**Recognised Terminology**
- The recognised terminology sets adopted for the eHR Procedure Records includes:
    - HKCTT
    - GB97

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

**Message Standards**
- FHIR R4 message standards in JSON format are adopted for Chinese Medicine Procedure 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 Patient | This profile represents the constraints and localization applied to the Patient resource by eHRSS. | 1..1 |
| eHRSS Procedure | This profile defines a procedure structure which includes eHR Procedure data | 1..* |
| eHRSS Encounter | This profile defines an Encounter structure which related to the procedure performed | 0..* |

*Notes:*

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

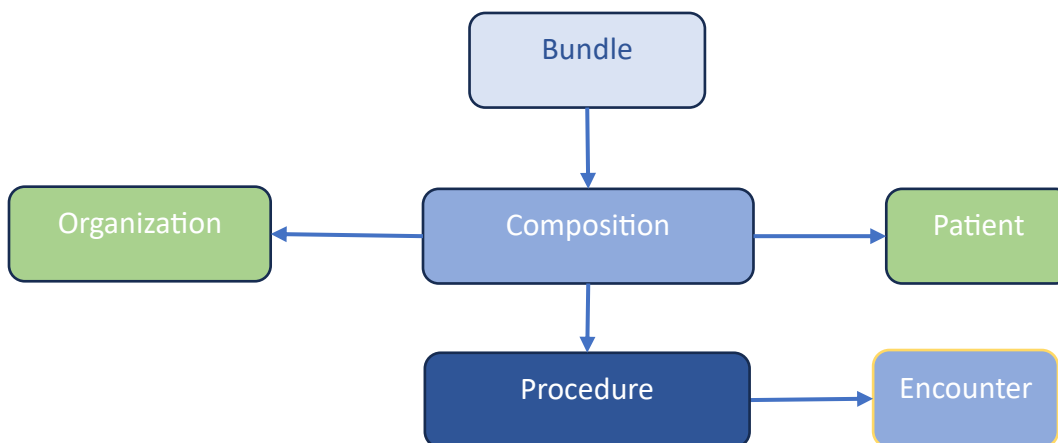| | |
|---|---|
| *Constants:* | ***Bolded*** *values are constants or fixed values.* |
| *E.g.:* | *Example values for illustration.* |
| *[…]:* | *Data variables* |
| *"…":* | *Data values.* |

| "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. Unused FHIR message items and those not processed by eHRSS are not listed below.  Readers may refer to the HL7 (HK) website for the full HL7 FHIR R4 message specifications if required.

## 5.1 Composition of HL7 FHIR Message

The Chinese Medicine Procedure Records are structured with the HL7 FHIR components (Resources) and hierarchy as specified below.



**Bundle Resource** (Single occurrence in each FHIR message bundle)
- Identify the container type for the collection of data included in the bundle. The resource composition and data contents are determined by the Bundle Type. For Chinese Medicine Procedure Records data upload, the following resources are included in the bundle.

**Composition Resource** (Single occurrence for each bundle)
- Indicate a composition of data or document are collected in the message bundle.  For "document" type of bundle, the "Composition Resource" must be the first resource to be included.

**Chinese Medicine Procedure Resource** (Multiple occurrences are allowed in a bundle)
- Contains the list of procedure records based on the mode of upload.

**Patient Resource** (Single occurrence for each **Bundle**)
- Contains the demographics data of the healthcare recipient (HCR) who has the procedure.

**Encounter Resource** (Single occurrence for each **Procedure**)
- Contains the encounter information for the procedure performed.

## 5.2    Data Elements in the Bundle Resource

A bundle is a collection of resources. For the type of "document" bundle, the following rules should be fulfilled.

*+ Rule: A document must have an identifier with a system and a value*

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 | Name of the current resource | string(6) | <u>Fixed value:</u> "resourceType":"**Bundle**" | M | M |
| id | Resource id which is a logic id to identify the artifact<br><br>A UUID represented as a URI (RFC 4122 )<br>Please see reference website in appendix | uuid | *E.g.*  c757873d-ec9a-4326-a141-556f43239520 | M | M |
| Identifier | Persistent identifier for the resource<br><br>UUID/OID for Bundle | Identifier | *E.g.*<br>"identifier" : {<br>"system" : "urn:ietf:rfc:3986",<br>"value" : "urn:uuid:0c3151bd-1cbf-4d64-b04d-cd9187a4c6e0"<br>} | M | M |
| Type | The type is always "document" | code | <u>Fixed value:</u> "type":"**document**" | M | M |
| Timestamp | When the bundle was assembled [current time] | instant | <u>In format:</u><br>YYYY-MM-DDThh:mm:ss.sss+zz:zz<br><br>*E.g.*  "timestamp": "2024-03-01T15:04:48.865+08:00" | M | M |

| JSON Name | Data Value | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenario |
|---|---|---|---|---|---|
| Entry fullUrl | Resources included in this bundle are collected under 'entry'<br><br>Each resource is identified by a uri<br><br>A UUID represented as a URI (RFC 4122 ) | BackboneElement uri | URI for UUID/OID<br><br>HL7 FHIR Resources that collected in the Procedure record upload Bundle include:<br>• Composition<br>• Organization<br>• Patient<br>• Procedure<br>• Encounter<br>*E.g.*<br>"fullUrl": "urn:uuid:21c6828c-b175-4a3b-b6de-6eaf69335021" | 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 Data Elements in the Composition Resource

The Composition Resource identifies whether the upload package includes list of Chinese Medicine Procedure records in this bundle.

| JSON Name | Data Value | Data Definition | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenerio |
|---|---|---|---|---|---|---|
| resourceType | Resource name | - | string (11) | Fixed value:<br>"resourceType":" **Composition**" | M | M |
| id | Resource id which is a logic id to identify the artifact<br><br>A UUID represented as a URI (RFC 4122 )<br><br>Please see reference website in appendix | - | uuid | *E.g.* 30551ce1-5a28-4356-b684-1e639094ad4d | M | M |
| status | The status is always "final". Other codes are not accepted by eHRSS. | - | string(5) | Fixed value:<br>"**final**" | M | M |

| JSON Name | Data Value | Data Definition | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenario |
|---|---|---|---|---|---|---|
| type.coding.system type.coding.display | Composition type<br><br>A coding object is required. | - | CodeableConcept<br><br>coding.system<br><br>coding.display | Fixed value:<br>"type": {<br>"coding": [<br>{<br>"system": "**[eHR FHIR URL]**",<br>"display": "**Hong Kong eHR Healthcare Document**"<br>}]} | M | M |
| subject.reference | [resource.id] of Patient Resource included in the same bundle | HCR has the procedure in this bundle | Reference(100) | In format:<br>Patient/<resource id><br><br>*E.g.*<br>"subject": {<br>"reference": "Patient/6e480262-978c-49f0-a793-468293932fc2"<br>}<br>• This resource id is the same value of the Patient resource id<br>• The Patient Resource contains data of the HCR | M | M |
| date | Message generation time<br><br>*eHRSS will use this value and [record key] for overriding records uploaded in eHRSS* | Composition creation time | dateTime(29) | In format:<br>YYYY-MM-DDThh:mm:ss.sss+zz:zz<br><br>*E.g.* "date":"2022-12-01T15:04:48.000+08:00" | M | M |
| author | Author of this composition<br><br>*eHRSS will not interpret this value* | - | Reference(100) | Fixed value:<br>Organization/author<br><br>*E.g.*<br>"author": [{<br>"reference" : "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e"}]<br><br>• This resource id is the same value of the Organization resource id | M | M |
| title | Title of this composition<br><br>*eHR will not interpret this value* | - | string(33) | Fixed value:<br>title:"**Hong Kong eHR Healthcare Document**" | M | M |
| section | Composition is broken into sections | - | BackboneElement | - | M | M |

| JSON Name | Data Value | Data Definition | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenerio |
|---|---|---|---|---|---|---|
| title | A human readable label for this section | - | string(255) | Fixed value:<br>title: "**Chinese Medicine Procedure Records**" | M | M |
| code | A code identifying the kind of content contained within the section. This must be consistent with the section title. | - | CodeableConcept<br><br>coding.system<br><br>coding.code<br><br>coding.display | Fixed value:<br>"code": {<br>"coding": [<br>{<br>"system": "**[eHR FHIR URL]**/datadomain",<br>"code": "**CMPX**",<br>"display": "**Chinese Medicine Procedure Records**"<br>}]} | M | M |
| entry | A reference to data that supports this section<br><br>**Each entry represents each record | | Reference(100) | Reference Format:<br>Procedure/<resource id><br>• This resource id is the same value of the Procedure resource id<br>• The Procedure Resource contains data of the HCR 's procedure are included in this bundle. | M | M |
| 99999999-TransactionType | [Transaction Type] Insert / Update / Delete | • Insert ("I"): Upload a record which has never been uploaded to eHRSS before.<br>• 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 (identified by [Record Key]).<br>• Delete ("D"): Delete an record which has been uploaded to eHRSS before and has since be cancelled or deleted (identified by [Record Key]).<br>• DM mode only permits 'I' (Insert) | extension url string(1) | Permissible Values:<br>**I**: Insert<br>**U**: Update<br>**D**: Delete<br><br>*E.g.:*<br>"extension": [<br>{<br>"url": "**[eHR FHIR URL]**/99999999-TransactionType",<br>"valueString": "**[Transaction Type]**"<br>}] | M | M |

| JSON Name | Data Value | Data Definition | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenerio |
|---|---|---|---|---|---|---|
| 99999999-LastUpdateDateTime | [Last Update Date Time] | The last update datetime for HCP system | extension url dateTime(29) | In format:<br>YYYY-MM-DDThh:mm:ss.sss+zz:zz<br><br>*E.g:* "2019-05-31T08:30:00.000+08:00"<br><br>*E.g:*<br>"extension": [<br>{<br>"url": "**[eHR FHIR URL]**/99999999-LastUpdateDateTime",<br>"valueDateTime": "**[Last Update Date Time]**"<br>}] | M | M |
| 99999999-TransactionDateTime | [Transaction Date Time] | The datetime indicates the transaction sequence | extension url dateTime(29) | In format:<br>YYYY-MM-DDThh:mm:ss.sss+zz:zz<br><br>*E.g.* "2019-05-31T08:30:00.000+08:00"<br><br>*E.g.*<br>"extension": [<br>{<br>"url": "**[eHR FHIR URL]**/99999999-TransactionDateTime",<br>"valueDateTime": "**[Transaction Date Time]**"<br>} ] | M | M |
| 99999999-ComplianceLevel | [Compliance Level] | Data Compliance level | extension url string(1) | Permissible Values:<br>2,3<br><br>E.g.<br>"extension": [<br>{<br>"url": "**[eHR FHIR URL]**/99999999-ComplianceLevel",<br>"valueString": "**[Compliance Level]**"<br>}] | M | M |

| JSON Name | Data Value | Data Definition | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenerio |
|---|---|---|---|---|---|---|
| 99999999-RecordCreateDatetime | [Record Create Datetime] | Datetime when the record was created in source system of HCP | extension url dateTime(29) | In format:<br>YYYY-MM-DDThh:mm:ss.sss+zz:zz<br>*E.g.*"2021-01-25T08:30:00.000+08:00"<br><br>*E.g.*<br>"extension": [<br>{<br>  "url": "**[eHR FHIR URL]**/99999999-RecordCreateDatetime",<br>  "valueDateTime": "**[Record Create Datetime]**"<br>}] | O | O |
| extension 99999999-RecordCreateInstIdentifier | [Record Create Institution Identifier] | A unique identifier assigned by eHR Healthcare Provider Index to each healthcare institution who created the record | extension url string(10) | *E.g.*<br>"extension": [<br>{<br>  "url": "**[eHR FHIR URL]**/99999999-RecordCreateInstIdentifier",<br>  "valueString": **"[Record Create Institution Identifier]"**<br>}] | O | O |
| extension 99999999-RecordCreateInstName | [Record Create Institution Name] | Name of healthcare institution who created the record | extension url string(255) | *E.g.*:<br>"extension": [<br>{<br>  "url": "**[eHR FHIR URL]**/99999999-RecordCreateInstName",<br>  "valueString": "**[Record Create Institution Name]**"<br>}] | O | O |
| extension 99999999-RecordLastUpdateDatetime | [Record Last Update Datetime] | Datetime when the record was last updated in source system of HCP | extension url dateTime(29) | In format:<br>YYYY-MM-DDThh:mm:ss.sss+zz:zz<br>E.g. 2017-03-04T08:30:00.000+08:00<br><br>*E.g.*<br>"extension": [<br>{<br>  "url": "**[eHR FHIR URL]**/99999999-RecordLastUpdateDatetime",<br>  "valueDateTime": "**[Record Last Update Datetime]**"<br>}] | O | O |

| JSON Name | Data Value | Data Definition | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenerio |
|---|---|---|---|---|---|---|
| extension 99999999-RecordUpdateInstIdentifier | [Record Update Institution Identifier] | A unique identifier assigned by eHR Healthcare Provider Index to each healthcare institution who updated the record | extension url string(10) | *E.g.* "extension": [ { "url": "**[eHR FHIR URL]**/99999999-RecordUpdateInstIdentifier", "valueString": "**[Record Update Institution Identifier]**" }] | O | O |
| extension 99999999-RecordUpdateInstName | [Record Update Institution Name] | Name of healthcare institution who updated the record | extension url string(255) | *E.g.* "extension": [ { "url": "**[eHR FHIR URL]**/99999999-RecordUpdateInstName", "valueString": "**[Record Update Institution Name]**" }] | O | O |
| identifier | [Record key] | A unique identifier for each record | string(40) | *E.g.* "identifier": { "system": "**[HCP FHIR URL]**/Recordkey", "value": "**[Record key]**" } | M | M |

## 5.4　Data Elements in the Patient Resource

Data elements providing information on the HCR whom this bundle of Procedure records belong to.

| JSON Name | Data Field | Data Definition | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenerios |
|---|---|---|---|---|---|---|
| resourceType | Resource name | - | string(7) | Fixed value: "resourceType" : "**Patient**" | M | M |
| id | Resource id reference by Procedure resource | Logical id of this artifact A UUID represented as a URI (RFC 4122 ); | string(32) | *E.g.*6e480262-978c-49f0-a793-468293932fc2 | M | M |
| identifier | eHR number for this patient | - | identifier | | | |
| type.coding.system | Link to document type coding system | - | uri | Fixed value:"**[eHR FHIR URL]**/typeofID-ext" | M | M |
| type.coding.code | identifier type code | - | string(5) | Fixed value: "**EHRNO**" | M | M |

| JSON Name | Data Field | Data Definition | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenerios |
|---|---|---|---|---|---|---|
| value | [eHR number] | A unique HCR identifier assigned by eHRSS. | numeric(12) | *E.g.*<br>{<br>  "type": {<br>   "coding": [{<br>    "system": "**[eHR FHIR URL]**/typeofID-ext",<br>    "code": "**EHRNO**"}]<br>  }, "value": "**[eHR number]**"<br>} | M | M |
| identifier | Document type and HKIC for this patient | - | identifier | | | |
| type.coding.system | Link to document type coding system | - | uri | <u>Fixed value:</u>"**[eHR FHIR URL]/typeofID-ext**" | M | M |
| type.coding.code | [Type of identity document] | The type of identity document the HCR used for eHealth registration or identity update. | string(6) | <u>Permissible Value:</u><br>ID, BC, CD, ECID | M | M |
| value | [HKIC] | • Hong Kong Identity Card (HKIC) number; or<br>• Registration Number on Hong Kong Birth Certificate (post-1981); or<br>• Consular Corps Identity Card number issued by HKSAR Immigration Department | string(12) | <u>Format:</u><br>AANNNNNNC or ANNNNNNC<br>e.g.: A1234563<br><br>• C is the check digit<br>• One leading space if there is only one leading alphabet in HKIC number<br>• All Uppercase | M | M |
| identifier | Document type and document number for this patient | <u>Mandatory</u> if [Type of identity document] = ID / BC / CD or [Identity document number] is blank<br><u>Optional</u> if [Identity document number] is given | identifier | | | |
| type.coding.system | Link to document type coding system | - | uri | <u>Fixed value:</u>"**[eHR FHIR URL]/typeofID-ext**" | O* | O* |
| type.coding.code | [Type of identity document] | The type of identity document the HCR used for eHealth registration or identity update. | string(6) | Refer to the document type code set provided in the **self-service kit** or the eHRSS official website for the most updated code set. | O* | O* |

| JSON Name | Data Field | Data Definition | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenerios |
|---|---|---|---|---|---|---|
| value | [Identity document number] | The document number of the HCR's identity document | string(30) | <u>Mandatory</u> if HKIC identifier is blank | O* | O* |
| name.family | [English surname] | HCR's surname in English<br><br>For single name cases, the single name can be specified in either [English surname] or [English given Name] | string(40) | <u>Mandatory</u> if [English full name] is blank; else Optional<br><br>All Uppercase letters<br><br>e.g.1: CHAN<br>e.g.2: PARTICIPANT53 | M* | M* |
| name.given | [English given name] | HCR's given name in English | string(40) | <u>Mandatory</u> if [English full name] is blank; else Optional<br><br>All Uppercase letters | M* | M* |
| text | [English full name] | HCR's full name in English | string(100) | <u>Mandatory</u> if [English surname] and [English given name] are blank<br><br><u>In format:</u><br>[English surname] + [,] + 1 white space + [English given name]<br><br>All Uppercase letters<br><br>* If HCR has either English surname or given name stored in local EMR system, full name should be filled. | M* | M* |
| gender | [sex] | The Administrative Gender defined in FHIR<br><br>eHR will convert the FHIR gender to eHR [Sex] according to the Section 6 conversion table | code | <u>Permissible Values:</u><br>- male<br>- female<br>- unknown<br><br>*E.g.*:<br>"gender": " **[Sex]**" | M | M |

| JSON Name | Data Field | Data Definition | FHIR Data Type (Max Length) | Remarks | M/O | Delete Scenerios |
|---|---|---|---|---|---|---|
| birthdate | [Date of birth] | The HCR's date of birth as indicated on the HCR's identity document | Date(10) | In format: YYYY-MM-DD<br><br>*E.g.*: "birthDate": "**[Date of birth]**"<br><br>If date is exact to 'Year' (e.g. 2010), the unknown month and day should be filled with '01-01'. Example: "2010-01-01".<br><br>If date is exact to 'Month' (e.g. 2011-12), the unknown day should be filled with '01'. Example: "2011-12-01". | M | M |

## 5.5 Data Elements in the Procedure resource

The information about an individual who has Chinese Medicine procedure performed.

| JSON Name | Data Value | FHIR Data Type (Max Length) | Remarks | L2 M/O | L3 M/O | Delete Scenario |
|---|---|---|---|---|---|---|
| resousrceType | Resource name | string(9) | Fixed Value: "resourceType": "**Procedure**" | M | M | M |
| id | [Resource id] reference by Composition resource<br><br>A UUID represented as a URI (RFC 4122 )<br><br>Please see reference website in appendix | uuid | E.g. c7781f44-6df8-4a8b-9e06-0b34263a47c5 | M | M | M |
| identifier | [Record key] A unique identifier for each Chinese Medicine procedure record within HCP's EMR system. | string(40) | This [Record Key] is reference to the same [Record Key] in Composite Resource entry<br><br>"identifier": {<br>"system": "**[HCP FHIR URL]**/Recordkey",<br>"value": "**[Record key]**"} | M | M | M |
| status | Code to identify the status of the procedure | string(9) | Fixed value: **completed** | M | M | M |
| code | Identification of the procedure | CodeableConcept | | | | |
| Recognised Terminology | | | | | | |

| JSON Name | Data Value | FHIR Data Type (Max Length) | Remarks | L2 M/O | L3 M/O | Delete Scenario |
|---|---|---|---|---|---|---|
| coding.system | Link to recognized terminology coding system which indicate the [Chinese Medicine procedure performed - recognised terminology name] Name of the recognised terminology from which the Chinese Medicine procedure performed is referenced to. | uri | Fixed value: "system": "**[uri for Chinese Medicine procedure performed - recognised terminology name]**" For HKCTT, fixed uri: **[EHR FHIR URL]**/HKCTT For GB97, fixed uri: **[EHR FHIR URL]**/GB97 | NA | M | NA |
| coding.code | [Chinese Medicine procedure performed identifier - recognised terminology] Unique identifier of the Chinese Medicine procedure performed in the recognised terminology | string(20) | "code":"**[Chinese Medicine procedure performed identifier - recognised terminology]**" For HKCTT, use [TermID] e.g. 9730000 For GB97, use [section number] e.g. 27.1 | NA | M | NA |
| coding.display | [Chinese Medicine procedure performed description - recognised terminology] The description of the Chinese Medicine procedure performed in the recognised terminology. It should be the corresponding description of the selected [Chinese Medicine procedure performed identifier - recognised terminology]. | string(255) | "display": "**[Chinese Medicine procedure performed description - recognised terminology]**" For HKCTT, use [eHR description] e.g. 毫針療法 For GB97, use [療法名稱] e.g. 体(毫)针疗法 | NA | M | NA |
| Local Terminology | | | | | | |
| coding.system | Link to local terminology coding system | uri | Fixed Value: "**[HCP FHIR URL]**/procedure " | M | M | NA |
| coding.code | [Chinese Medicine procedure performed local code] Local code of the Chinese Medicine procedure performed that is developed by the healthcare organization. | string(20) | "code": "**[Chinese Medicine procedure performed local code]**" | O | O | NA |

| JSON Name | Data Value | FHIR Data Type (Max Length) | Remarks | L2 M/O | L3 M/O | Delete Scenario |
|---|---|---|---|---|---|---|
| coding.display | [Chinese Medicine procedure performed local description] Local description of the Chinese Medicine procedure performed that is developed by the healthcare organization | string(255) | "display": "**[Chinese Medicine procedure performed local description]**" | M | M | NA |
| subject.reference | [resource.id] of Patient Resource in the same bundle<br><br>HCR has the procedure in this bundle | Reference(100) | In format:<br>Patient/<resource id><br><br>E.g.<br>"subject": {<br>"reference":<br>"Patient/6e480262-978c-49f0-a793-468293932fc2"<br>}<br>• This resource id is the same value of the Patient resource id<br>• The Patient Resource contains data of the HCR | M | M | NA |
| Encounter | [resource.id] of Encounter Resource in the same bundle related to the Procedure resource | Reference(100) | In format:<br>Encounter/<resource id><br><br>E.g.<br>"encounter": {<br> "reference":<br>"Encounter/169281c8-fb76-4e9c-b30f-3dfb3a7f53f2"<br>}<br><br>• This resource id is the same value of the Encounter resource id | O | O | NA |
| performedDateTime | [Chinese medicine procedure performed reference date] Date when the procedure was performed. For eHR, if this date is not available, the create date of the procedure data should be used when submitting data to the eHR | dateTime(29) | In format:<br>YYYY-MM-DDThh:mm:ss.sss+zz:zz<br><br>E.g. "date":"2023-06-13T16:15:00.000+08:00" | M | M | NA |
| bodySite | Target body site | CodeableConcept | | O | O | NA |

| JSON Name | Data Value | FHIR Data Type (Max Length) | Remarks | L2 M/O | L3 M/O | Delete Scenario |
|---|---|---|---|---|---|---|
| 1006679-CMprocSiteSeqNum | [Chinese Medicine procedure site sequence number]<br>The sequence number of the Chinese Medicine procedure site. | numeric (3) | Mandatory if [Chinese Medicine procedure site local description] is provided, else N/A.<br><br>Permissible values: 1-999<br><br>"extension": [<br>  {  "url": "[EHR FHIR URL]/1006679-CMprocSiteSeqNum",<br>     "valueInteger":<br>**[1006679-CMprocSiteSeqNum**]<br>}] | M* | M* | NA |
| Chinese Medicine Procedure Site - Recognised Terminology | | | | | | |
| coding.system | Link to recognised terminology coding system which indicate the [Chinese Medicine procedure site - recognised terminology name]<br>Name of the recognised terminology from which the Chinese Medicine procedure site is referenced to. | uri | Mandatory if [Chinese Medicine procedure site identifier - recognised terminology] is given, else N/A.<br><br>Permissible values:<br>HKCTT<br><br>For HKCTT, fixed uri:<br>**[EHR FHIR URL]**/HKCTT | NA | M* | NA |
| coding.code | [Chinese Medicine procedure site identifier - recognised terminology]<br>Unique identifier of the Chinese Medicine body structure in the recognised terminology. | string(20) | Mandatory if [Chinese Medicine procedure site description - recognised terminology] is given, else N/A.<br><br>"code":"**[Chinese Medicine procedure site identifier - recognised terminology]**" | NA | M* | NA |

| JSON Name | Data Value | FHIR Data Type (Max Length) | Remarks | L2 M/O | L3 M/O | Delete Scenario |
|---|---|---|---|---|---|---|
| coding.display | [Chinese Medicine procedure site description - recognised terminology] The description of Chinese Medicine procedure site in the recognised terminology. It should be the corresponding description of the selected [Chinese Medicine procedure identifier - recognised terminology]. | string(255) | <u>Mandatory</u> if [Chinese Medicine procedure site - recognised terminology name] is given, else N/A.<br><br>"display": "**[Chinese Medicine procedure site description - recognised terminology]**" | NA | M* | NA |
| Chinese Medicine Procedure Site - Local Terminology | | | | | | |
| coding.system | Link to local terminology coding system | uri | Fixed Value: "**[HCP FHIR URL]/**CMprocSite" | O | O | NA |
| coding.code | [Chinese Medicine procedure site local code] Local code created by the healthcare provider for the Chinese Medicine procedure site. | string(20) | "code": "**[Chinese Medicine procedure site local code]**" | O | O | NA |
| coding.display | [Chinese Medicine procedure site local description] Local description created by the healthcare provider for the Chinese Medicine procedure site. | string(255) | <u>Mandatory</u> if [Chinese medicine procedure site identifier - recognised terminology] is given, else <u>Optional</u>.<br><br>"display": "**[Chinese Medicine procedure performed local description]**" | O | M* | NA |
| 1006685 - CMprocSiteComment | [Chinese medicine procedure site comment] Comment made on the Chinese medicine. | string(255) | <u>Optional</u> if [Chinese medicine procedure site local description] is given, else N/A.<br><br>"extension": [<br>{ "url": "**[EHR FHIR URL]**/1006685-CMprocSiteComment",<br>"valueString": "**[Chinese medicine procedure site comment]**"<br>}] | O* | O* | NA |

| JSON Name | Data Value | FHIR Data Type (Max Length) | Remarks | L2 M/O | L3 M/O | Delete Scenario |
|---|---|---|---|---|---|---|
| note | [Chinese medicine procedure performed comment] Comment made on the Chinese medicine procedure performed | string(255) | *E.g.* "text": "**[Chinese medicine procedure performed comment]**" | O | O | NA |

## 5.6 Data Elements for the Encounter resource

The information about an encounter which related to procedure performed.

| JSON Name | Data Value | Data Definition | FHIR Data Type (Max Length) | Remarks | L2 M/O | L3 M/O | Delete Scenario |
|---|---|---|---|---|---|---|---|
| resourcType pe | Resource name | Encounter information about the service provided to HCR | string(9) | Fixed Value: "resourceType":" **Encounter**" | M | M | NA |
| id | Resource id reference by Procedure resource | Logical id of this artifact A UUID represented as a URI (RFC 4122 ); | uuid | *E.g.* urn:uuid:169281c8-fb76-4e9c-b30f-3dfb3a7f53f2 | O | O | NA |
| 99999999 - AttendanceInstIdentifier | [Attendance institution identifier] | eHRSS assigned [Healthcare Institution Identifier] (HCI ID) of the healthcare institution where the HCR receives the service. | string(10) | *E.g.* "extension": [ { "url": "**[eHR FHIR URL]**/99999999-AttendanceInstIdentifier ", "valueString": "**[Attendance institution identifier]**" }] | O | O | NA |
| identifier | [Episode number] | A unique reference number assigned by the healthcare institution to an episode of care. The episode of care can be of inpatient or outpatient nature | string(20) | *E.g.* { "system": "**[HCP FHIR URL]**/EpisodeNum", "value": "**[Episode number]**" } | O | O | NA |
| status | Encounter Status *eHRSS will not interpret the value.* | -- | code | Fixed Value : "**finished**" | M | M | M |

| JSON Name | Data Value | Data Definition | FHIR Data Type (Max Length) | Remarks | L2 M/O | L3 M/O | Delete Scenario |
|---|---|---|---|---|---|---|---|
| Class | Classification of patient encounter<br><br>*eHRSS will not interpret the value.* | -- | Coding | Fixed Value:<br>"class": {<br>  "system": "**[eHR FHIR URL]**/class",<br>  "code": "UNKNOWN",<br>  "display": "Unknown status"} | M | M | M |

# 6. 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.

Chinese Medicine Procedure template:

| | Comment |
|---|---|
| ```json
{
    "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]"
                    },
``` | Bundle Resource<br>-[Resource id for Bundle]<br><br><br><br><br><br>[current time]<br><br><br>-[fullUrl for Composition]<br>Composition Resource<br><br><br><br>- [Sending location]<br><br><br>-[Compliance level]<br><br><br>-[Domain version] |

```json
            {
                "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": "Chinese Medicine Procedure Records",
                "code": {
                    "coding": [
                        {
                            "system": "https://ehealth.gov.hk/FHIR/datadomain",
                            "code": "CMPX"
                        }
                    ]
                },
                "entry": [
                    {
                        "extension": [
                            {
                                "url": "https://ehealth.gov.hk/FHIR/99999999-
RecordCreateDatetime",
```

| | - [Upload mode] |
|---|---|
| | Link to Patient Resource<br>- [Message generation time]<br><br>Link to Organization Resource |

```
                                              "valueDateTime": "[Record creation              - [Record creation
datetime]"                                                                                    datetime]
                                        },
                                        {
                                              "url": "https://ehealth.gov.hk/FHIR/99999999-
RecordCreateInstIdentifier",
                                              "valueString": "[Record creation institution    - [Record creation
identifier]"                                                    },                              institution
                                        {                                                       identifier]
                                              "url": "https://ehealth.gov.hk/FHIR/99999999-
RecordCreateInstName",
                                               "valueString": "[Record creation institution name]"   - [Record creation
                                        },                                                           institution name]
                                        {
                                              "url": "https://ehealth.gov.hk/FHIR/99999999-
RecordLastUpdateDatetime",
                                               "valueDateTime": "[Record last update           -[Record last update
datetime]"                                                                                     datetime]
                                        },
                                        {                                                      - [Record update
                                              "url": "https://ehealth.gov.hk/FHIR/99999999-     institution
RecordUpdateInstIdentifier",                                                                    Identifier]
                                              "valueString": "[Record update institution Identifier]"
                                        },
                                        {                                                      - [Record update
                                              "url": "https://ehealth.gov.hk/FHIR/99999999-      institution name]
RecordUpdateInstName",
                                              "valueString": "[Record update institution name]"

                                        },
                                        {
                                              "url": "https://ehealth.gov.hk/FHIR/99999999-     - [Transaction
TransactionDateTime",                                                                           datetime]
                                              "valueDateTime": "[Transaction datetime]"
                                        },
                                        {
                                              "url": "https://ehealth.gov.hk/FHIR/99999999-     - [Transaction type]
TransactonType",
                                              "valueString": "[Transaction type]"
                                        },
                                        {
                                              "url": "https://ehealth.gov.hk/FHIR/99999999-     - [Last Update
LastUpdateDateTime",                                                                             datetime]
```

```
                        "valueDateTime": "[Last Update datetime]"

                    }
                ],
                "reference": "Procedure/[Resource id for Procedure]"
                "identifier": {
                    "system": "https://ehealth.gov.hk/FHIR/HCP/local/Recordkey",
                    "value": "[Record key]"
                }
            }
        ]
    }
    ]
    }
},
{
    "fullUrl": "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e",
    "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",
                            "value": "EHRNO"
                        }
                    ]
                },
                value": "[eHR Number]"
            },
            {
                "type": {
                    "coding": [
```

| | |
|---|---|
| | Link to Procedure Resource<br>- [Record key] |
| | [fullUrl for Organization]<br>Organization Resource<br>- [Resource id for Organization resource]<br>- [Healthcare institution long name] |
| | [fullUrl for Patient]<br>Patient (HCR) Resource<br>- Resource id for Patient resource] |
| | - Fixed value |
| | - [eHR Number] |

```json
                            {
                                "system": "http://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]"
                    ]
                }
            ],
            "gender": "[Sex]",
            "birthDate": "[Date of Birth]"

        }
    },
    {
        "fullUrl": "Procedure/[Resource id for Procedure]",
        "resource": {
            "resourceType": "Procedure",
            "id": "[Resource id for Procedure]",
            "status": "completed",
            "code": {
                "coding": [
                    {
                        "system": "https://ehealth.gov.hk/FHIR/HKCTT",
                        "code": "[Chinese Medicine procedure performed identifier -
recognised terminology]"
                        "display": "[Chinese Medicine procedure performed description -
recognised terminology]"
                    }
                },
                {
                        "system": "https://ehealth.gov.hk/FHIR/HCP/local/procedure",
                        "code": "[Chinese Medicine procedure performed local code]",
```

| | |
|---|---|
| | - [Type of identity document] |
| | - [Document number] |
| | - [English full name]<br>- [English surname]<br>- [English given name] |
| | - [Sex]<br>- [Date of Birth] |
| | [fullUrl for Procedure]<br>Procedure Resource<br>- [Resource id for Procedure resource] |
| | -[Chinese Medicine procedure performed - recognised terminology name]<br>-[Chinese Medicine procedure performed identifier - recognised terminology]<br>-[Chinese Medicine procedure performed description - recognised terminology] |

```
                      "display": "[Chinese Medicine procedure performed local
description]"
                    }
                ]
            },
            "subject": {
                "reference": "Patient/[Resource id for Patient]"
            },
            "encounter": {
                "reference": "Encounter/169281c8-fb76-4e9c-b30f-3dfb3a7f53f2"
            },
            "performedDateTime": "[Chinese Medicine procedure performed reference date]",
            "bodySite": [
                {
                    "extension": [
                        {
                            "url": "https://eheahth.gov.hk/FHIR/1006679-CMprocSiteSeqNum",
                            "valueInteger": [Chinese Medicine procedure site sequence
number]
                        }
                    ],
                    "coding": [
                        {
                            "system": "https://www.health.gov.hk/FHIR/HKCTT",
                            "code": "[Chinese Medicine procedure site identifier -
recognised terminology]",
                            "display": "[Chinese Medicine procedure site description -
recognised terminology]"
                        },
                        {
                            "system": "https://www.ehealth.gov.hk/FHIR/HCP/local/CMprocSite",
                            "code": "[Chinese Medicine procedure site local code]",
                            "display": "[Chinese Medicine   procedure site local
description]",
                            "extension": [
                              {
                                "url": "https://eheahth.gov.hk/FHIR/1006685-CMprocSiteComment",
                                "valueString": "[Chinese Medicine procedure site comment]"
                              }
                            ]
                        }
                    ]
                }
            ]
        }
```

-[Chinese Medicine procedure performed local code]
-[Chinese Medicine procedure performed local description]

Link to Patient Resource
Link to Encounter Resource
-[Chinese Medicine procedure performed reference date]

-[Chinese Medicine procedure site sequence number]
-[Chinese Medicine procedure site - recognised terminology name]
-[Chinese Medicine procedure site identifier - recognised terminology]
-[ Chinese medicine procedure site description - recognised terminology]
-[Chinese Medicine procedure site local code]
-[Chinese Medicine procedure site local description]
-[Chinese Medicine procedure site comment]

```json
            ]
        }
    },
    {
        "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": "http://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]

# 7. Mapping Tables

## 7.1 FHIR Administrative Gender

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

# 8. 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 |

# 9. Data variable

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

# 10.  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

Procedure Resource: https://hl7.org/fhir/r4/procedure.html

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