



# **Technical Interface Specification For PPP Data Interface**

**[G??]**

**Version 1.0.0**

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The Government of the Hong Kong Special Administrative Region

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## DOCUMENT SUMMARY

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Document Title	Interface Specification for GOPC PPP Interface using HL7 FHIR
Creation Date	7 Jul 2023
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Document Description	The paper explains the technical interface for implementing Health Level Seven (HL7) Fast Healthcare Interoperability Resources (FHIR) Release 4 (R4) for transferring clinical data in generic method for PPP project. The document should be read in conjunction with other related documents suggested by HI (Standard and Policy) teams
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## **AMENDMENT HISTORY**

<b>Version No.</b>	<b>Summary of Changes</b>	<b>Date</b>
1.0.0	Draft version	7 Jul 2023

## **1 PURPOSE**

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

This document describes the technical interface requirements for implementing Health Level Seven (HL7) Fast Healthcare Interoperability Resources (FHIR) Release 4 (R4) for downloading the Public-Private Partnership Programmes (PPP) data from eHRSS platform to Healthcare Provider's local EMR. Readers who prefer more in-depth study of the HL7 FHIR (R4) standards may refer to the HL7 FHIR website <https://www.hl7.org/fhir/> for further details.

## **2 SCOPE**

This reference defines the message format of HL7 FHIR for the communication of PPP data in generic approach with using Information Architecture (IA) model. Each clinical data is assigned an entity ID in the IA model. The structure of a HL7 FHIR, data mapping specification of patient identity data, clinical data and the format of a HL7 FHIR message and the response message will be covered in this document.

The recognised terminology sets applied in this interface specification include:

- Hong Kong Clinical Terminology Table (HKCTT)

### 3 HL7 FHIR MESSAGE STANDARDS

Health Level Seven (HL7) standards will be implemented for information exchange under PPP GOPC data download. HL7 provides a FHIR interoperability standards which builds on and adapts modern, widely used RESTFUL practices to enable data sharing across different HCPs.

FHIR is based on "Resources" which are the common building blocks for all exchanges.

To learn more about the HL7 organization and standards, please refer to the official HL7 website.  
<http://hl7.org/fhir/R4/overview-dev.html>

### 4 DEFINITIONS AND CONVENTIONS

#### 4.1 ABBREVIATIONS

Term	Description
eHR	Electronic Health Record
eHR ISO	Electronic Health Record – Information Standards Office
EMR	Electronic Medical Record
FHIR	Fast Healthcare Interoperability Resources
FHIR R4	Fast Healthcare Interoperability Resources Release 4
GOPC	General Outpatient Clinic
HCP	Healthcare Provider
HL7	Health Level Seven
PPP	Public-Private Partnership Programme

#### 4.2 NOTATIONS

Value	Description
“quoted”	Fixed Value
N/A	Not Applicable
YYYY	Year
MM	Month
DD	Day
hh	Hour (24-Hour)
mm	Minute
Ss	Second
.sss	Millisecond

#### 4.3 NOTES:

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



*M/O column:* 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.

*Constants:* **Bolded** values are constants or fixed values.

*E.g.:* Example values for illustration.

*[...]:* Data variables

*“...”:* Data values.

*NA:* Data Field in concern is not used.

## **5 CONDITIONS**

- eHR will ensure the integrity, accuracy and completeness of structure data when sending data to HCP.
- HCP will ensure compliance to the Data Download Policy and security assessment requirement specified by eHR Office.
- To ensure the integrity of the clinical record, the complete set of structured data should be sent for any amendment.
- eHR will send the latest snapshot of clinical record to HCP if the HCP has the access right to such data.
- eHR will send data for which consultation date matched with the date specified by HCP

## **6 DELIVERY SPECIFICATIONS**

- FHIR R4 message standards in JSON format will be implemented for delivering data
- Those clinical data to be interfacing should follow HA Information Architecture by HI(S&P) team and assigned relevant ID (e.g. Entity ID, Form ID, Value ID, etc.)
- The Sender must make further agreement with Receiving-end about detail interface specification like technical protocol, data validation rule, encryption, timeliness, etc. The supplement interface specification or implementation guide should be produced in order to minimize the misinterpretation.

## **7 SCENARIOS**

HCP can enquire the snapshot of the GOPC profile for a HCR by the consultation date.

### **General Flow**

- i. Data required to be collected for PPP e.g. GOPC will be directly captured in the PPP platform (not directly from any local EMRs).
- ii. eHR stores the PPP data
- iii. HCP enquires the PPP record by profile (e.g. GOPC) of a HCR using FHIR API.
- iv. eHR ensures that the HCP has the access right and then sends the records to HCP.

## 8 SETUP AND CONFIGURE

### 8.1 MUTUAL-AUTHENTICATION

The GOPCPPP Download service is implementing with two-way SSL mutual authentication for authenticating each other's (HCP and eHR) identity. To implement the mutual authentication, HCP is required to trust the eHR Certificate Authorities (CA) and provides the HCP's Certificate Authorities (CA) to eHR.

## 9 QUERY AND PARAMETERS

Post request is used to enquiry the questionnaire request:

```
POST [fhir-server]/QuestionnaireResponse/_search
Content-Type: application/x-www-form-urlencoded
param1=value&param2=value
```

The following tables shows the Header and its requirements:

Header Name	Data Type	Mandatory	Description	Remarks
Content-Type	String(50 char)	Yes	Indicate media type of the resource	Fixed Value, "application/x-www-form-urlencoded"
MG_ASSIGNSER_CD	String(50 char)	Yes	Profile Code	For GOPC PPP: "EIFGOPCPPPDELIVERY"

The following tables shows the input parameter and its requirements:

Input Parameter	Data Field	M/O	Max Length	Remarks
subject:Patient.identifier:typeofID-ext  <b>EHRNO</b>	eHR Number	M	10	
subject:Patient.name.family	English Surname	M*	40	M if [EnglishGivenname ] is not provided
subject:Patient.name.given	English Givenname		40	M if [English Surname] is not provided
subject:Patient.gender	Sex	M	7	<u>Permissible value:</u> male   female   other   unknown
subject:Patient.birthDate	Date of Birth	M	10	<u>In format</u> <u>YYYY-MM-DD</u> <u>e.g. 1974-12-25</u>
subject:Patient.identifier:typeofID-ext  <b>ID</b>	Document Type with HKID	M*	Document Type:6	Either HKID pair or Document number pair is mandatory
subject:Patient.identifier:typeofID-ext <document type>	Code of the Document Type with Document number		Document no.: 30	Code of the Document Type is provided in Remark 1 table
QuestionnaireResponse.authored	Consultation Date	M	10	<u>In format</u> <u>YYYY-MM-DD</u> <u>e.g. 1974-12-25</u>

				Date of record return (inclusive) Return 1 day data
--	--	--	--	---

In the following template, data variables that have to be provided as header and parameters are highlighted in [Red].

```
curl --location --
request POST 'https://gw.dev.ehr.gov.hk/api/restful/callServer/baseR4/QuestionnaireR
esponse/ search' \
--header 'MG_ASSIGNSER_CD: [MG_ASSIGNSER_CD]' \
--header 'Content-Type: application/x-www-form-urlencoded' \
--data-urlencode 'subject:Patient.name.family=[English Surname]' \
--data-urlencode 'subject:Patient.name.given=[English Givenname]' \
--data-urlencode 'subject:Patient.gender=[gender]' \
--data-urlencode 'subject:Patient.birthDate=[Date of Birth]' \
--data-urlencode 'authored=[Consultation Date]' \
--data-urlencode 'subject:Patient.identifier:of-
type=http://ehealth.gov.hk/FHIR/typeofID-ext|EHRNO|[eHR number]' \
--data-urlencode 'subject:Patient.identifier:of-
type=http://ehealth.gov.hk/FHIR/typeofID-ext|ID|[HKID]'
```

Below shows an example of the request:  
e.g.

```
curl --location --
request POST 'https://gw.dev.ehr.gov.hk/api/restful/callServer/baseR4/QuestionnaireR
esponse/ search' \
--header 'MG_ASSIGNSER_CD: EIFGOPCPPPDELIVERY' \
--header 'Content-Type: application/x-www-form-urlencoded' \
--data-urlencode 'subject:Patient.name.family=LEE' \
--data-urlencode 'subject:Patient.name.given=One' \
--data-urlencode 'subject:Patient.gender=male' \
--data-urlencode 'subject:Patient.birthDate=1991-01-01' \
--data-urlencode 'authored=2023-08-03' \
--data-urlencode 'subject:Patient.identifier:of-
type=http://ehealth.gov.hk/FHIR/typeofID-ext|EHRNO|470381070819' \
--data-urlencode 'subject:Patient.identifier:of-
type=http://ehealth.gov.hk/FHIR/typeofID-ext|ID|_A1234567'
```

Remark 1 table

The following code are used for the Document Type:

Code	Document Type (English)	Document Type (Chinese)	HKIC No.*	Doc No.*
DI	Document of Identity for Visa Purposes	香港特別行政區簽證身份書		M
RP	Re-entry Permit	香港特別行政區回港證		M

BC	Birth Certificate - HK	香港出生證明書	M	
ID	HKID Card	香港身份證	M	
OP	Travel document - overseas	其他國家/地區發出之旅遊證件		M
OC	Travel documents - PRC	中華人民共和國發出之其他旅遊證件		M
AR	Adoption Certificate	領養證明書		M
EC	Exemption Certificate	豁免證明書(或稱豁免登記證明書)	O	M
OW	One-way Permit	單程証		M
TW	Two-way Permit	雙程証		M
ED	eHR document	電子健康紀錄文件		M
RE	Recognizance	擔保書(行街紙)		M
MD	Macao ID Card	澳門身份證		M
CD	Consular Corps Identity Card	領事團身份證	M	

A leading space is inserted if the HKIC (BC, ID, ECID, CD) number has a single character at the beginning. Input all the alphanumeric characters [A-Za-z0-9] without the bracket. For example, if the HKIC number is “A123456(7)”, it should pass the value as “ A1234567” to PPP interface.

- \* M – Mandatory,
- O - Optional

## 10 SEARCH RESULT MESSAGE FORMAT OVERVIEW

### 10.1 RESULT FHIR MESSAGE STANDARDS

There are four major components used to carry the clinical information together with patient identification in the search results. The components are:

- HL7 FHIR – Bundle Resource  
A container for a collection of resources.
- HL7 FHIR – Composition Resource  
A Composition is the basic structure from which FHIR Documents
- HL7 FHIR – Patient Resource  
Demographics and other administrative information about an individual
- HL7 FHIR – QuestionnaireResponse Resource  
A structured set of entities and their values

## 11 DATA DEFINITION AND MAPPING

### 11.1 DATA MAPPING IN BUNDLE RESOURCE

The table below described the data mapping for Bundle resource. Un-used FHIR message items are not listed below. Readers may refer to the HL7 (HK) website for the full HL7 message specifications if required.

No.	Data Field	Definition	FHIR Datatype and max length	M/O	Remarks
1	resourceType	Resource name	string	M	Fixed value: <b>Bundle</b>
2	id	Logical id of this artifact	string	M	
3	type	BundleType ( <a href="http://hl7.org/fhir/ValueSet/bundle-type">http://hl7.org/fhir/ValueSet/bundle-type</a> )	code	M	Fixed value: <b>document</b>
4	timestamp	When the bundle was assembled	instant	M	In format: YYYY-MM-DDThh:mm:ssZ  e.g. 2022-12-01T05:04:48Z

No.	Data Field	Definition	FHIR Datatype and max length	M/O	Remarks
5	entry.resource	<p>The Resource for the entry. The purpose/meaning of the resource is determined by the Bundle.type.</p> <p>A document must have a Composition as the first resource. Please refer to Composition resource requirements</p>	BackboneElement	M	<p>Always refers reference:Composition/resource id</p> <p>The Composition resource mapping will be described in section 11.2</p>

## 11.2 DATA MAPPING IN COMPOSITION RESOURCE

The table below described the data mapping for Composition resource. Un-used FHIR message items are not listed below. Readers may refer to the HL7 (HK) website for the full HL7 message specifications if required.

No.	Data Field	Definition	FHIR Datatype	M/O	Remarks
1	resourceType	Resource name	string	M	Fixed value: <b>Composition</b>
2	id	Logical id of this artifact	string	M	
3	status	The workflow/clinical status of this composition. The status is a marker for the clinical standing of the document.	code	M	Fixed value: <b>final</b>
4	type	Kind of composition	CodeableConcept	M	Fixed value: <pre>"type": {   "coding": [     {       "system":         "http://ehealth.gov         .hk/iams",       "code": "PPP",       "display": "PPP"     }   ],   "text": "GOPC" }</pre>
5	subject	Who and/or what the composition is about	Reference	M	<p>Always refers reference:Patient/resource id</p> <p>The patient resource mapping will be described in section 11.3</p>

No.	Data Field	Definition	FHIR Datatype	M/O	Remarks
6	date	Composition editing time	dateTime	M	In format: YYYY-MM-DDThh:mm:ssZ  e.g. 2015-02-07T09:28:17Z
7	author	Who and/or what authored the composition	Reference	M	Fixed value: "author": [ { "reference": "Organisation/eHRSS" }, "display": "eHRSS" }]
8	title	Human Readable name/title	String	M	Fixed value: <b>General Outpatient Clinic Public-Private Partnership Programme</b>
9	section	Composition is broken into sections	BackboneElement	M	
9.1	section.title	The label for this particular section. Human Readable name/title	String	M	Fixed value: <b>General Outpatient Clinic Public-Private Partnership Programme</b>
9.2	section.code	Classification of section	CodeableConcept	M	Fixed value: "code": { "coding": [ { "system": "http://ehealth.gov.hk/iams", "code": "GOPC", "display": "GOPC" }], "text": "GOPC" }
9.3	section.entry	A reference to data that supports this section  The entries are multiple	Reference to QuestionnaireResponse	M	Always refers reference: QuestionnaireResponse /resource id  The Composition resource mapping will be described in section 11.4



No.	Data Field	Definition	FHIR Datatype	M/O	Remarks
9.3.1	identifier	A unique identifier for each GOPCPPP record within HCP	Identifier	M	Fixed value <pre>"identifier": {   "system":     "http://ehealth.gov     .hk/Recordkey",   "value": "[Record     Key]" }</pre> e.g. value=RECKEY000 1001040

### 11.3 DATA MAPPING IN PATIENT RESOURCE

The table below described the data mapping for Patient resource. Un-used FHIR message items are not listed below. Readers may refer to the HL7 (HK) website for the full HL7 message specifications if required.

No	Data Field	Definition	FHIR Data Type	Max Length	M/O	Remarks
1	resourceType	Resource name	string	N/A	M	Fixed value: <b>Patient</b>
2	id	A reference id reference by other resource	string	N/A	M	
3	identifier	An identifier for this participant	Identifier	12	M	Value=[eHR number]
3.1	type.coding.system	Description of identifier	string	40	M	Fixed value: <b>http://ehealth.gov.hk/fhir/typeofID-ext</b>
3.2	type.coding.code		string	5	M	Fixed value: <b>EHRNO</b>
4	identifier	An identifier for this participant	Identifier	40	M	Value=[HKIC] Or Value=[Identity document number]
4.1	type.coding.system	Description of identifier	string	40	M	Fixed value: <b>http://ehealth.gov.hk/fhir/typeofID-ext</b>

No	Data Field	Definition	FHIR Data Type	Max Length	M/O	Remarks
4.2	type.coding.code		string	5	M	Code=[Type of identity document ]  code: one of the following type of identity document, please refer to Remark 1 table <ul style="list-style-type: none"> <li>ID</li> <li>BC</li> <li>CD</li> <li>ECID (for HKID in EC)</li> </ul>
5	name	Name of the participant	HumanName	N/A	M	
5.1	family	Surname	string	40	M	Family=[English Surname]
5.2	given	Given name	string	40	M	Given=[English Given name]
6	gender	Gender of the participant	code	NA	M	<u>Permissible value:</u> male female unknown
7	birthDate	Date of birth of the participant	date	N/A	M	<u>In format</u> <u>YYYY-MM-DD</u> <u>e.g. 1974-12-25</u>

#### 11.4 DATA MAPPING IN QUESTIONNAIRERESPONSE RESOURCE

The table below described the data mapping for QuestionnaireResponse resource. Un-used FHIR message items are not listed below. Readers may refer to the HL7 (HK) website for the full HL7 message specifications if required.

No.	Data Field	Definition	FHIR Data Type	M/O	Remarks
1	resourceType	Resource name	string	M	Fixed value: <b>QuestionnaireResponse</b>
2	id	It is used to locate resources and allow one resource to reference another	id	M	
3	identifier	Identifier for the record Record Key	string	M	[Record key]

No.	Data Field	Definition	FHIR Data Type	M/O	Remarks
4	questionnaire	Canonical URL of Questionnaire being answered	canonical	M	Fixed value: "questionnaire": "https://ehealth.gov.hk/iams/PPP-GOPC"
5	status	status code in-progress   completed   amended   entered-in-error   stopped	code	M	Fixed value: <b>completed</b>
6	subject	The subject of the questions	reference	M	Always refers reference:patient/resource id  The patient resource mapping is described in section 11.3
7	authored	Consultation Date	dateTime	M	In format YYYY-MM-DD e.g. 1974-12-25
8	item	GOPC PPP data fields	BackboneElement	M	
8.1	linkId	Pointer to specific item from Questionnaire	Entity ID and data type of clinical data are shown in the PPP GOPC Profile Data Definition Table		In format "definition": "http://HKCTT/[entity ID]"
8.2	definition	ElementDefinition - details for the item  url:http://HKCTT/[entity ID]			
8.3	answer	The response(s) to the question			
8.4	value[x]	Single-valued answer to the question			

PPP GOPC Profile Data Definition Table

Entity ID	Data Description	linkId	FHIR datatype
linkId value=Consultation			
-2145204001	A reference number which will be used in frontend to identify the record	ref_no	value String
1003215	Consultation date of patient visits PMP  In format : YYYY-MM-DD	consultation_date	value Date
1006339	The chronic disease type of the patient <u>Permissible values:</u> HT DM HT+DM HT+Hyperlipidaemia DM+Hyperlipidaemia HT+DM+Hyperlipidaemia	chronic_disease	value String
linkId value=Assessment			
For DM/HT/Hyperlipidaemia Disease			

102215	Systolic BP Max value: 300 Min value: 60	systolic_bp	value String
102214	Diastolic BP Max value: 300 Min value: 60	diastolic_bp	value String
1002266	Pulse per minute Max value: 300 Min value: 20	pulse	value String
1002338	Body temperature in degree celsius [oC] Max value: 50 Min value: 25	temperature	value String
100118	Body weight in kilogram [kg] Max value: 250 Min value: 1	weight_kg	value String
100119	Body height in meter [m] Max value: 3 Min value: 0.1	height_m	value String
100117	Body Mass Index [kg/m2] Max value: 50 Min value: 25	bmi	value String
1002592	The H'stix value [mmol/L] Max value: 40 Min value: 0.01	hstix	value String
102141	Code of smoking habit <u>Permissible values:</u> N - Non-Smoker Y - Smoker EX - Ex-Smoker	smoking_habit	value Codin g
1002604	The code of alcohol use <u>Permissible values:</u> N - Non-Drinker CD - Current Drinker SD - Social Drinker EX - Ex-Drinker	alcohol_use	value Codin g
1001746	The drug compliance <u>Permissible values:</u> Good Fair Poor	drug_comp	value String
1001747	The remark of drug compliance	drug_comp_r	value String
1001743	The side effect of medication	med_side_effect	value String
1001785	The remark of side effect of medication	med_side_effect_r	value String
1001748	The dietary compliance <u>Permissible values:</u> Good	dietary_comp	value String

	Fair Poor		
1001749	The remark of dietary compliance	dietary_comp_r	value String
1006330	The exercise status <u>Permissible values:</u> Regular Infrequent None	exercise	value String
1006331	The remark of exercise status	exercise_r	value String
linkId=note_diagnosis			
1006307	Indicator of other diagnosis (Other-checkbox) <u>Permissible values:</u> Y - Yes N – No	other_diagno_flag	value String
1006314	The detail of other diagnosis	other_diagnosis	value String
1003355	The clinical notes No more than 4000 characters	clinical_notes	value String
1006311	The possible value of the diagnosis diagnosis_v_cd: HT/DM/ HYPERLIPIDAEMIA  The description of possible value of the diagnosis diagnosis_v_desc: Hypertension/ DM/ HYPERLIPIDAEMIA	diagnosis_v	value Codin g
1006312	The possible value of the symptom symptom_v_cd  The description of possible value of the symptom symptom_v_desc	symptom_v	value Codin g
linkId=Medication			
Standard Drug ( <i>Repeatable</i> )			
1006321	The PRN value of the standard drug Default: NULL PRN	s_drug_prn	value String
1005276	The duration of the standard drug	s_drug_duration	value String
1006319	The code of duration unit of standard drug s_drug_dur_unit_cd  The display value of duration unit of standard drug s_drug_dur_unit_desc	s_drug_dur_unit	value Codin g
1006341	The dosage and frequency of standard drug	s_drug_dosage_freq	value String
1006340	The code of supersede of drug name of standard drug in form version 3 s_drug_item_cd	s_drug_item	value Codin g

	The display value of supersede of drug name of standard drug in form version 3 s_drug_item_desc		
Others Drug ( <i>Repeatable</i> )			
1006308	The PRN value of the others drug	o_drug_prn	value String
1006310	The duration of the others drug	o_drug_duration	value String
1006320	The code of duration unit of others drug o_drug_dur_unit_cd  The display value of duration unit of others drug o_drug_dur_unit_desc  D - Days W - Weeks	o_drug_dur_unit	value Coding
1006342	The drug name of others drug	o_drug_name	value String
1006344	The dosage and frequency of others drug	o_drug_dosage_freq	value String

## 12 ERROR HANDLING

eHR will response a collection of error, warning, or information messages in FHIR OperationOutcome Resource that result from download request.

### 12.1 STANDARDS FOR RESPONSE MESSAGE

There are three major components used to response together to notify the receiving end the result of action. The components are:

- HL7 FHIR – Bundle Resource  
Please refer to section 11.1
- HL7 FHIR – Composition Resource  
Please refer to section 11.2
- HL7 FHIR – OperationOutcome Resource

### 12.2 DATA MAPPING IN OPERATIONOUTCOME RESOURCE

The table below described the data mapping for OperationOutcome resource. Un-used FHIR message items are not listed below. Readers may refer to the HL7 (HK) website for the full HL7 message specifications if required.

No.	Data Field	Description	FHIR Data Type	M/O	Remarks
1	resourceType	Resource name	Resource	M	Fixed value =OperationOutcome

No.	Data Field	Description	FHIR Data Type	M/O	Remarks
2	id	Logical id of this artifact	string	M	
3	issue	A single issue associated with the action	BackboneElement	M	
3.1	severity	fatal   error   warning   information   success Binding: <a href="#">Issue Severity (Required)</a>	code	M	Severity in the OperationOutcome detail list table
3.2	code	Error or warning code Binding: <a href="#">Issue Type (Required)</a>	code	M	
3.3	details.text	Additional details about the error	String	M	<u>In format:</u> [return code]:[return description]  details.text.text in OperationOutcome detail list table

OperationOutcome detail list table

severity	code	details.text
error	invalid	[1000] : Missing input parameter %msg%
error	invalid	[1001] : Invalid input parameter %msg%
error	invalid	[1002] : Invalid input parameter format %msg%
error	invalid	[2000] : Participant Cannot be Found
error	invalid	[3000] : Participant Consent Cannot be Found
error	invalid	[4000] : Consultation data Cannot be found
error	invalid	[9001] : EIF_GOPCPPP_DELIVERY – searchQuestionnaireResponse failed to execute

## 13 OTHER REQUIREMENTS

### 13.1 CHARACTER SET AND ENCODING

Unicode Transformation Format – 8 bit (UTF-8) is suggested to be used in clinical data transfer.

## 14 MESSAGE EXAMPLE

The sample data and message are listed below for reference:

### Example Data

Data Field	Sample Value
eHR number	598774893500
HKIC number	Q1730351 Type :ID”
Identity document number	(Blank)
Type of identity document	(Blank)
Surname	CHAN
Given name	MAN MAN
Birth date	1974-12-25
Sex	female

### GOPC PPP Example 1 QuestionnaireResponse Resource example

Consultation Data	Sample Value
consultation_date	2017-05-09
chronic_disease	HT+DM+Hyperlipidaemia
Assessment Data	Sample Value
systolic_bp	118
diastolic_bp	88
Pulse	80
Temperature	37.2
weight_kg	66.8
height_m	1.7
Bmi	24.4
Hstix	1.7
smoking_habit	smoking_habit_cd : N smoking_habit_desc : Non-Smoker
alcohol_use	alcohol_use_cd : N alcohol_use_desc : Non-Drinker
drug_comp	n/a
drug_comp_r	n/a
med_side_effect	n/a
med_side_effect_r	n/a
dietary_comp	n/a
dietary_comp_r	n/a
exercise	n/a
exercise_r	n/a
Note/Diagnosis Data	Sample Value
other_diagno_flag	n/a
other_diagnosis	n/a
clinical_notes	n/a
1. diagnosis	diagnosis_v_cd : HT diagnosis_v_desc : Hypertension TermID : 7529



2. diagnosis	diagnosis_v_cd : HYPERLIPIDAEMIA diagnosis_v_desc : Hyperlipidaemia TermID : 4323
3. diagnosis	diagnosis_v_cd : DM diagnosis_v_desc : DM TermID : 3983
1. symptom	symptom_v_cd : ABDOMINAL_PAIN symptom_v_Desc : Abdominal pain TermID : 15982
2. symptom	symptom_v_cd : BACKACHE symptom_v_Desc : Backache TermID : 13792
Medication	Sample Value
Other medication	
1 <sup>st</sup> Drug item	
o_drug_prn	PRN
o_drug_duration	3
o_drug_dur_unit	o_drug_dur_unit_cd : D o_drug_dur_unit_desc : Day(s) TermId: 7703285
o_drug_name	calamine cream
o_drug_dosage_freq	LA tds
Standard medication	
s_drug_prn	PRN
s_drug_duration	12
s_drug_dur_unit	s_drug_dur_unit_cd : W s_drug_dur_unit_desc : Week(s)
s_drug_name	Amlodipine
s_drug_dosage_freq	10mg daily
s_drug_item	s_drug_item_cd : AMLO01 s_drug_item_desc : Amlodipine (Besylate) Tablet 5mg

For the JSON sample, please refer to the GOPC\_PPP\_SPECIFICATION\_SAMPLE1 in the package

## 15 REFERENCES

- HL7 FHIR (<https://www.hl7.org/fhir/>)
- Information Architecture Management System (IAMS) (<http://iams.home>)
- FHIR Resource QuestionnaireResponse (<https://www.hl7.org/fhir/questionnaireresponse.html>)