

醫健通

eHealth

香港特別行政區政府 HKSARGOVT

Developers' Quick Guide
eHealth Laboratory Result (Microbiology Result) Records
(FHIR)

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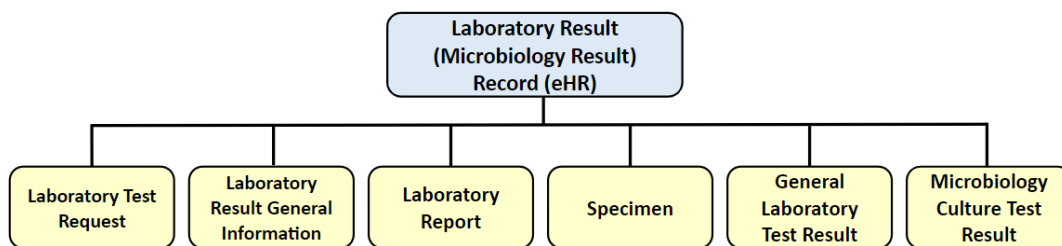
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1. Purpose

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

The technical interface requirements for implementing Health Level Seven (HL7) Fast Healthcare Interoperability Resources (FHIR) Release 4 (R4) for uploading the Laboratory results – Microbiology Result Records (LABMB) 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



Laboratory Test Request

Basic information of requesting a laboratory test, including unique order number, institution, doctor, clinical information and panel.

Laboratory Result General Information

General information of laboratory result, including performing laboratory name, request number, laboratory category, laboratory report status, reference datetime, authorized person, authorized datetime and report comment.

Laboratory Report

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

Specimen

Specimen details, including local terminology information of specimen type, specimen collection and arrival datetime.

General Laboratory Test Result

Descriptions of test result, including laboratory test name, type of result, type of result indicator, test result unit, reference range, text result and result note.

Microbiology Culture Test Result

Details of microbiology culture test result, including test name, finding text result and organism.

3. Upload Standards

Supported Data Standards Level

The Laboratory Result (Microbiology Result) data domain (LABMB) supports Level 1 (including text / PDF report), Level 2 and Level 3 data standards.

Examples of Laboratory Result (Microbiology Result) Scenarios

Below are the examples depicting the different details in Level 1, Level 2 and Level 3 laboratory records:

Data Field	Level 1 Data	Level 2 Data	Level 3 Data
Laboratory test request healthcare institution identifier	9410023272	9410023272	9410023272
Laboratory test request healthcare institution long name	NORTH DISTRICT HOSPITAL	NORTH DISTRICT HOSPITAL	NORTH DISTRICT HOSPITAL
Laboratory test request healthcare institution local name	NDH	NDH	NDH
Panel local code	URCU	URCU	URCU
Panel local description	Urine Routine & Culture Test	Urine Routine & Culture Test	Urine Routine & Culture Test
Laboratory test request performing laboratory name	PWH	PWH	PWH
Laboratory test request number	15B2945000	15B2945000	15B2945000
Laboratory category code	MICRO	MICRO	MICRO
Laboratory category description	Microbiology & Virology	Microbiology & Virology	Microbiology & Virology
Laboratory category local description	Microbiology	Microbiology	Microbiology
Report status code	F	F	F
Report status description	Final Report	Final Report	Final Report
Report status local description	Final	Final	Final
Laboratory report reference datetime	2023-12-10T11:48:00.000+08:00	2023-12-10T11:48:00.000+08:00	2023-12-10T11:48:00.000+08:00
Laboratory report authorised datetime	2015-12-12T11:48:00.000+08:00	2015-12-12T11:48:00.000+08:00	2015-12-12T11:48:00.000+08:00
Specimen type - recognised terminology name	NA	NA	HKCTT
Specimen type identifier - recognised terminology	NA	NA	5700014
Specimen type description - recognised terminology	NA	NA	Ascitic fluid
Specimen type local code	NA	Sputum	ASCITIC FLUID
Specimen type local description	NA	Wound Swab	ASCITIC FLUID
Laboratory test name - recognised terminology name	NA	NA	LOINC
Laboratory test name identifier - recognised terminology	NA	NA	2823-3

Laboratory test reportable result	NA	Large numbers of WBC seen A few Gram negative bacilli seen	Large numbers of WBC seen A few Gram negative bacilli seen	
Laboratory test result note	NA			
Microbiology culture test – recognised terminology name	NA	NA	HKCTT	
Microbiology culture test identifier - recognised terminology	NA	NA	5200583	
Microbiology culture test description - recognised terminology	NA	NA	Bacteria identified in Body fluid by Culture	
Microbiology culture test local code	NA	BF_ORG	BF_ORG	
Microbiology culture test local description	NA	Body fluid culture	Body fluid culture	
Microbiology culture finding text result	NA	Large numbers of WBC seen. A few Gram negative bacilli see	Large numbers of WBC seen. A few Gram negative bacilli see	
Organism - recognised terminology name	NA	NA	HKCTT	
Organism identifier – recognised terminology	NA	NA	5000624	
Organism description – recognised terminology	NA	NA	Enterobacter species	
Organism local code	NA	20416	20416	
Organism local description	NA	Enterobacter species	Enterobacter species	
Susceptibility test and related property - recognised terminology name	NA	NA	HKCTT	HKCTT
Susceptibility test and related property identifier - recognised terminology	NA	NA	5200220	5200076
Susceptibility test and related property description - recognised terminology	NA	NA	Piperacillin+Tazobactam [Susceptibility]	Cefuroxime Parenteral [Susceptibility]
Susceptibility test and related property local code	NA	23276	23276	23273
Susceptibility test and related property local description	NA	Piperacillin/tazobactam	Piperacillin/tazobactam	Cefuroxime (parenteral)
Susceptibility test and related property result code	NA	NA	I	R
Susceptibility test and related property result description	NA	NA	Intermediate	Resistant
Susceptibility test and related property result local description	NA	Moderate	Intermediate	Resistant
Organism growth description text result	NA	Moderate growth	Moderate growth	Moderate growth

Terminology

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

Message Standards

- FHIR R4 message standards in JSON format are adopted for Laboratory Result (Microbiology Result) upload to eHealth.
- Resource and Element names are case-sensitive

Encoding

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

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.*

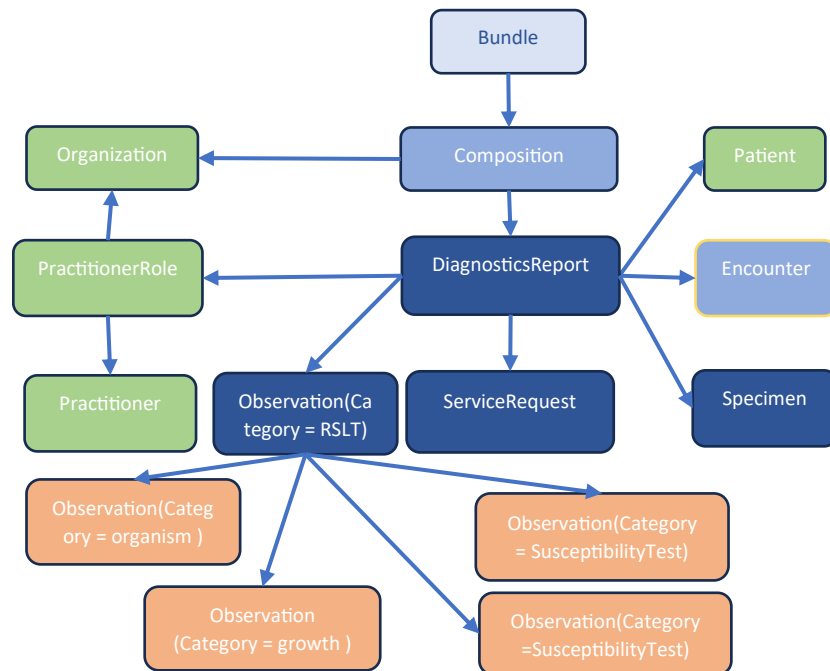
[S]: *Must Support*

4. 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.

4.1 Composition of HL7 FHIR Message

The Laboratory Result (Microbiology result) 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 LABMB 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.

DiagnosticReport Resource (Multiple occurrences for each **bundle**)

- Contains the Laboratory result report of the healthcare recipient (HCR)

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

- Contains the demographics data of the healthcare recipient (HCR) who has the Laboratory result

Specimen(Single occurrence for each **DiagnosticReport**)

- Contains the details of sample to be used for analysis related to the DiagnosticReport

Observation (Multiple occurrences for each **DiagnosticReport**)

- Provide the atomic results for a particular investigation to support

Organization Resource

- Institution(s) (HCP) authored the upload LABMB Records. (Single occurrence for each **Bundle**)
- Institution(s)(HCP/HCI) requested the LABMB records (Single occurrence is for each **DiagnosticReport**)
- Institution(s)(HCP/HCI) issued the LABMB records (Single occurrence is for **DiagnosticReport**)

PractitionerRole Resource (Multiple occurrence each **DiagnosticReport**)

- The role which requested the upload LABMB Records.
- The role which issued the upload LABMB Records.

Practitioner Resource (Single occurrence each **PractitionerRole**)

- Healthcare staff requested the upload LABMB Records.
- Healthcare staff issued the upload LABMB Records.

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

- Contains the encounter information for the LABMB.

4.2 Data Elements in the FHIR Resource

Details of data elements for eHRSS in each FHIR Resources are provided in below sections. Non-eHR elements which are required to complete the structure of the FHIR messages are included, and hence eHR would not process those values. Readers may refer to the Hong Kong HL7 FHIR website for further details if interested.

4.3 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	L1 – L3 M/O	Delete scenario
resourceType	Resource Name	string(6)	Fixed value: " Bundle "	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	E.g. "id": "ba8606d5-33c3-45c3-89fe-29e229a41bf2"	M	
identifier	Identifier of the Bundle				
system	System urn	string(255)	Fixed value:	M	

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1 – L3 M/O	Delete scenario
value	System assigned unique id of the Bundle For the use of globally unique value, the value of system is always “urn:ietf:rfc:4122” and the value of value is a Universally Unique Identifier (UUID).	string (45)	"identifier":{ "system" : "urn:ietf:rfc:4122" "value" : "urn:uuid:0c3151bd-1cbf-4d64-b04d-cd9187a4c6e0" }		
type	Bundle Type	string(8)	<u>Fixed value:</u> "document"	M	
timestamp	Datetime when the bundle was assembled. [current datetime]	dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz <i>E.g.</i> "2024-03-01T15:04:48.865+08:00"	M	
entry.resource	Resources included in this bundle are collected under 'entry'	Backbone Element	E.g. "entry": [{ "fullUrl": "Composition/fed3d9a", "resourceType": "Composition" }, { "fullUrl": "Patient/2e839c7", "resourceType": "Patient" }] HL7 FHIR Resources that collected in the LABMB record upload Bundle include: Composition Organization Patient PractitionerRole Practitioner DiagnosticReport ServiceRequest Specimen Observation Encounter	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

4.3.1 Data Elements in the Composition Resource

The Composition Resource identifies whether the upload package includes a list of LABMB records in this bundle. HCP is required to provide the record keys associated with each LABMB 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	L1-L3 M/O	Delete scenarios
resourceType	Resource name	string (11)	Fixed value: "Composition"		M
id	[resource id] which is a logic id to identify the composition A UUID represented as a URI (RFC 4122) Please see reference website in appendix	uuid			M
extension 99999999-SendingLocation	[Sending Location Code] A code agreed between eHRSS and the HCP which indicates the location where the data is sending from	extension url string(20)	Use [HCP ID] if sending location cannot be provided. E.g. { "url": "[eHR FHIR URL]/99999999-SendingLocation", "valueString": "[Sending Location Code]"}		O
extension 99999999-ComplianceLevel	[Compliance Level]	extension url string(1)	Permissible Values: 1,2,3 E.g. "extension": [{ "url": "[eHR FHIR URL]/99999999-ComplianceLevel", "valueString": "[Compliance Level]" }]		M
extension 99999999-DomainVersion	[Domain version] The version of this interface	extension url string(11)	Fixed value: "eHRSS-1.4.3" E.g. { "url": "[eHR FHIR URL]/99999999-DomainVersion", "valueString": "eHRSS-1.4.3"}		M
extension 99999999-UploadMode	[Upload Mode]	extension url string(3)	Permissible values: NBL: Non Bulk load E.g. { "url": "[eHR FHIR URL]/99999999-UploadMode", "valueString": "NBL"}		M
status	The status is always "final". Other codes are not accepted by eHRSS.	string(5)	Fixed value: "final"		M
type	The code to identify the composition type				
coding.system	Link to data domain coding system	String(255)	In Format: "system": "[eHR FHIR URL] ",		M
coding.display	Composition type A coding object is required.	String(255)	Fixed value: "type": { "coding": [{ "system": "[eHR FHIR URL]", "display": "Hong Kong eHR Healthcare Document" }]}		M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1-L3 M/O	Delete scenarios
subject.reference	[resource.id] of Patient Resource included in the same bundle	reference(100)	<u>In format:</u> Patient/<resource id> <i>E.g.</i> <pre>"subject": { "reference": "Patient/6e480262-978c-49f0-a793-468293932fc2" }</pre> 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
date	Composition creation time [Message generation time] <i>eHRSS will use this value and [record key] for overriding records uploaded in eHRSS</i>	dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz <i>E.g.</i> "2024-03-01T15:04:48.865+08:00"		M
author.reference	[resource.id] of Organization Resource who is the author of this composition <i>eHRSS will not interpret this value</i>	reference(100)	<u>In format:</u> Organization/<resource id> <i>E.g.</i> <pre>"author": [{ "reference": "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e"}]</pre>		M
title	Title of this composition <i>eHR will not interpret this value</i>	string(33)	<u>Fixed value:</u> title:"Hong Kong eHR Healthcare Document"		M
section	List the DiagnosticReport resource(s) in this bundle with related record key		The entry is repeatable for multiple LABMB records		
title	A human readable label for this section <i>eHR will not interpret this value</i>	string(255)	<u>Fixed value:</u> "Laboratory Result (Microbiology Result) Records"		O
code	The code to identify the section content				
coding.system	Link to data domain coding system	string(255)	<u>In Format:</u> "system": "[eHR FHIR URL]/datadomain", <u>Fixed value:</u> <pre>"code": { "coding": [{ "system": "[eHR FHIR URL]/datadomain", "code": "LABMB", "display": "Laboratory Result (Microbiology Result) Records" }] }</pre>		M
coding.code	[Record type]	string(4)			M
coding.display	The long name of the record type	string(255)			M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1-L3 M/O	Delete scenarios
section.entry	[resource.id] of list the DiagnosticReport resource(s) in this bundle with related record key **Each entry represents each record	Reference(100)	<u>In format:</u> DiagnosticReport/<resource id> This resource id is the same value of DiagnosticReport resource id		M
extension 99999999-TransactionType	[Transaction Type] Insert/Update/Delete of a Record identified by the [Record Key].	extension url string(1)	<u>Permissible Values:</u> 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. <i>E.g:</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-TransactionType", "valueDateTime": "[Transaction Type]" }]		M
extension 99999999-LastUpdateDateTime	[Last Update Date Time] The last update datetime of the HCP's EMR system	extension url dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz <i>E.g:</i> "2023-08-31T08:30:00.000+08:00" <i>E.g:</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-LastUpdateDateTime", "valueDateTime": "[Last Update Date Time]" }]		M

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1-L3 M/O	Delete scenarios
extension 99999999-TransactionDateTime	[Transaction Date Time] Datetime when this transaction was created in the local EMR. It indicates the transaction sequence if multiple transactions of the same record are uploaded.	extension url dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz <i>E.g.</i> "2023-10-22T00:00:00.000+08:00" <i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-TransactionDateTime", "valueDateTime": "[Transaction Date Time]" }]		M
extension 99999999-RecordCreateDatetime	[Record Create Datetime] Datetime when the record was created in the source system of the HCP.	extension url dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz <i>E.g.</i> "2023-10-22T00:00:00.000+08:00" <i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-RecordCreateDatetime", "valueDateTime": "[Record Create Datetime]" }]	O	NA
extension 99999999-RecordCreateInstIdentifier	[Record Create Institution Identifier] eHRSS assigned [Healthcare Institution Identifier] (HCI ID) of the healthcare institution where the record was created	extension url string(10)	<u>Fixed length:10</u> <i>E.g.</i> "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)	<i>E.g.:</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-RecordCreateInstName", "valueString": "[Record Create Institution Name]" }]	O	NA
extension 99999999-RecordLastUpdateDatetime	[Record Last Update Datetime] The last update datetime of the HCP's EMR system	extension url dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz <i>E.g.</i> "2023-10-22T00:00:00.000+08:00" <i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/99999999-RecordLastUpdateDatetime", "valueDateTime": "[Record Last Update Datetime]" }]	O	NA

JSON Name	Data Value	FHIR Data Type (Max Length)	Remarks	L1-L3 M/O	Delete scenarios
extension 99999999-RecordUpdateInstIdentifier	[Record Update Institution Identifier] eHRSS assigned [Healthcare Institution Identifier] (HCI ID) of the healthcare institution where the record was last updated.	extension url string(10)	<u>Fixed length:10</u> E.g. "extension": [{ "url": "[eHR FHIR URL]/99999999-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
reference.DiagnosticReport	[resource.id] List of DiagnosticReport Resource included in the same bundle **Each entry represents each record	reference (100)	<u>In Format:</u> DiagnosticReport/<resource id> E.g "reference": "DiagnosticReport/63634800-5ffa-4700-a05c-8bf4a24f5ede" This resource id is the same value of DiagnosticReport resource id	M	M
identifier.system	Link to record key coding system	string(255)	<u>In format:</u> "[HCP FHIR URL]/Recordkey"	M	
Identifier.value	[Record key] of the Laboratory Record	string(50)	E.g. "identifier": { "system": "[HCP FHIR URL]/Recordkey", "value": "[Record Key]" }		

4.3.2 Data Elements in the Patient Resource

The Patient Resource provides the patient identifier referenced in the other Resources to identify the patient whom these LABMB data belongs to. This resource also contains the basic demographic data (major keys) used for the validation of the HCR's identity.

JSON Name	Data Field	sFHIR Data Type (Max Length)	Remarks	L1-L3 M/O	delete
resourceType	Resource name	string(7)	<u>Fixed value:</u> "Patient"	M	
id	[resource id] reference by Composition resource A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string(45)	This id identifies the patient / HCR whose LABMB records are included in the current bundle. It is used in [subject.reference] in the Composition Resources to identify the concerned patient.	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)	<u>Fixed value:</u> "[eHR FHIR URL]/typeofID-ext"	M	

JSON Name	Data Field	sFHIR Data Type (Max Length)	Remarks	L1-L3 M/O	delete
type.coding.code	identifier type code	string(5)	Fixed value: "EHRNO"	M	
value	[eHR number] A unique HCR identifier assigned by eHRSS.	string(12)	Fixed length: 12 e.g. 773024585457	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	
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	
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: AANNNNNNNC or ANNNNNNNC where: C is the check digit All Uppercase	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*	
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*	
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*	
gender	[sex] Gender of the patient eHR will convert the FHIR gender to eHR [Sex] according to the Section 6 conversion table	code(7)	Permissible Values: - male - female - unknown E.g.: "gender": "[Sex]"	M	

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delet e Scenario
identifier	[Laboratory test request healthcare institution identifier] The healthcare institution requested the laboratory test. It is the [HCI identifier] in the eHR Healthcare Provider Index <i>This field is referenced by the Requester Role of PractitionerRole resource</i>	string(10)	<u>Fixed length: 10</u> E.g. "identifier": [{ "system": "[EHR FHIR URL]/pvdr", "value": "[Laboratory test request healthcare institution identifier]" }]		O		NA
name	[Laboratory test request healthcare institution long name] The healthcare institution who requested the laboratory test. It is the [HCI displayed English long name] or the [HCI displayed Chinese long name] in the eHR Healthcare Provider Index <i>This field is referenced by the Requester Role of PractitionerRole resource</i>	string (255)	E.g. "name": "[Laboratory test request healthcare institution long name]"		O		NA
alias	[Laboratory test request healthcare institution local name] Local description of the healthcare institution who requested the laboratory test. <i>This field is referenced by the Requester Role of PractitionerRole resource</i>	string (255)	E.g. "alias": "[Laboratory test request healthcare institution local name]"		M		NA
Performer Role							
alias	[Laboratory test request performing laboratory name] Name of the laboratory who produced or coordinated the creation of the laboratory report. <i>This field is referenced by the Performer Role of PractitionerRole resource</i>	string (100)	E.g. "alias": "[Laboratory test request performing laboratory name]"		M		NA

4.3.4 Data Elements in DiagnosticReport

The DiagnosticReport Resources is referenced by the Composition Resource to identify each LABMB Report

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value:</u> “DiagnosticReport” <u>Mandatory</u> if [Laboratory test order number] is given		M		M*
id	[resource id] reference by Composition resource A UUID represented as a URI (RFC 4122)	string (45)	The resource id identifies the LABMB relevant to the Composition resource. <u>Mandatory</u> if [Laboratory test order number] is given		M		M*

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
extension 1003520-LabReportStatusDesc	<p>[Laboratory report status description] eHR description of the "Laboratory Report Status" code table which indicates the status of the laboratory report. It should be the corresponding description of the selected [Laboratory report status code].</p> <p>- Provisional/Preliminary report (A provisional report is issued when provisional or partial results become available and report is submitted to eHR. A final report will always follow after the provisional report.)</p> <p>- Final report (A completed report for the laboratory request.)</p> <p>- Amended report (An Amended report is issued when the final report of diagnosis or test result(s) have been changed or amended. Amended report includes information with the latest submitted provisional report/final report/supplementary report.)</p> <p>- Supplementary report (A supplementary report is issued when additional information is available when final/amended report has been submitted to eHR. Supplementary report includes information with the latest submitted provisional report/final report/amended report.)</p> <p>- Unspecified report status (Laboratory report status cannot be provided.)</p>	string(255)	<p>Permissible values: Provisional/Preliminary report Final report Amended report Supplementary report Unspecified report status</p> <p>Refer to the code set of "Laboratory report status" in Self-Service Kit. The latest code set in eHealth website shall prevail</p> <p>E.g.: { "url": "[EHR FHIR URL]/1003520-LabReportStatusDesc", "valueString": "[Laboratory report status description]" }</p>	M			NA
extension 1003521-LabReportStatusLocalDesc	<p>[Laboratory report status local description] A local description issued by the performing laboratory for indicating the status of the laboratory report</p>	string(255)	<p>E.g.: { "url": "[EHR FHIR URL]/1003521-LabReportStatusLocalDesc", "valueString": "[Laboratory report status local description]" }</p>	M			NA

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
extension 1003526- LabReport	[Laboratory report comment] The additional information about the laboratory report as a whole.	string(2000)	E.g.: { "url": "[EHR FHIR URL]/1003526- LabReportComment", "valueString": "[Laboratory report comment]" } <u>Mandatory</u> for Levels 2 and 3 if [Laboratory test reportable result] and [Laboratory test result note] are ALL blank, else <u>Optional</u> .	O	M*	M*	NA
1003529- LabReportText	[Laboratory report (text)] The Laboratory Report in text format	string(32767)	E.g.: { "url": "[EHR FHIR URL]/1003529- LabReportText", "valueString": "[Laboratory report (text)]" } <u>Mandatory</u> Level 1 if no attached PDF report, else <u>Optional</u> .	O*	O	O	NA
identifier	[Laboratory test request number] A unique identifier assigned by the Laboratory Information System (LIS) of the performing laboratory to identify the laboratory test request.	string(40)	E.g.: "identifier": [{ "system": "[HCP FHIR URL]/RequestNum", "value": "[Laboratory test request number]" }]	M			NA
basedOn.Reference	[resource.id] of ServiceRequest Resource which contains the details for what was requested	reference(10)	<u>In format:</u> ServiceRequest/<resource id> E.g. "basedOn": [{ "reference": "ServiceRequest/1b6d7e9e- dec1-4e68-88ec-ff83248e307f" }] <u>Mandatory</u> if [Laboratory test order number] is given	M			M*

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
status	[Laboratory report status code] eHR value of the "Laboratory Report Status" code table which indicates the status of the laboratory report.	string(1)	<u>Permissible values:</u> preliminary : Provisional/Preliminary report final : Final report corrected : Amended report appended : Supplementary report unknown : Unspecified report status Refer to the code set of “Laboratory report status” in Self-Service Kit . The latest code set in eHealth website shall prevail. <u>Mandatory</u> if [Laboratory test order number] is given		M		M*
category	Category of the Laboratory						
coding.system	Link to Laboratory Category coding system	string(255)	<u>In format:</u> " [eHR FHIR URL] /LabCatCode" _____ if [Laboratory category description] is given		M*		NA
coding.code	[Laboratory category code] eHR value of the "Laboratory Category" code table which indicates the category of the laboratory from which the report was produced.	string(10)	<u>In format:</u> "category": [{ "coding": [{ "system": " [EHR FHIR URL] /LabCatCode", "code": " [Laboratory category code] ", "display": " [Laboratory category description] " }], "text": " [Laboratory category local description] " }]]		M		NA
coding.display	[Laboratory category description] eHR description of the “Laboratory Category” code table which indicates the category of the laboratory from which the report was produced. It should be the corresponding description of the selected [Laboratory category code].	string(255)			M		NA
text	[Laboratory category local description] Description created by the performing laboratory for the category of the laboratory from which the report was produced	string(255)		Refer to the code set of “Laboratory category” in Self-Service Kit . The latest code set in eHealth website shall prevail.		M	
code	code of the Diagnostic Report						
coding.system	Link to Laboratory Panel coding system	string(255)	<u>In format:</u> " [eHR FHIR URL] /PanelCode" E.g: "code": { "coding": [{		M		M*
coding.code	[Panel local code] The requesting test/profile abbreviations for the laboratory request which was issued by the performing laboratory.	string(50)			O		M*

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
coding.display	<p>[Panel local description] The requesting test or profile description which was issued by the performing laboratory. This field describes the requested observation/test/profile</p> <p><i>For multiple Panel local descriptions, please use the format: <description 1>, <description 2>, <description 3>.</i></p>	string(255)	<p>"system": "[EHR FHIR URL]/PanelCode", "code": "[Panel local code]", "display": "[Panel local description]" } } }</p> <p><u>Mandatory</u> if [Laboratory test order number] is given</p> <p>If both [Panel local code] & [Panel local description] cannot be provided in Delete scenario, please put the following :</p> <p>"_code": { "extension": [{ "url": "http://hl7.org/fhir/StructureDefinition/dataAbsentReason", "valueCode": "unsupported" }] }</p>	M			M*
subject.reference	[resource.id] of Patient Resource included in the same bundle	reference(100)	<p><u>In format:</u> Patient/<resource id></p> <p>E.g. "subject": { "reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616" }</p> <p>This resource id is the same value of the Patient resource id Reference to the Patient Resource which contains demographic data of the HCR.</p>	O			NA
encounter.reference	[resource.id] of Encounter Resource in which the request was created	reference(100)	<p><u>In format:</u> Encounter/<resource id></p>	O			NA
effectiveDateTime.value	<p>[Laboratory report reference datetime] The reference date or datetime which is used to determine the display sequence of a specific laboratory report in the eHR. The laboratory reports are displayed in the eHR according to the following rule : i. Specimen collection datetime, if none ii. Specimen arrival datetime, if none iii. Laboratory request registration datetime.</p>	dateTime(29)	<p><u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz</p> <p>E.g. "2023-10-20 14:30:00.000+08:00"</p>	M			NA

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
issued	[Laboratory report authorised datetime] The date or datetime when a specific version of the laboratory report was authorised and ready to be issued	dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz E.g. "2023-10-20 14:30:00.000+08:00"	NA	O	O	NA
performer.reference	[resource id] of performing PractitionerRole who produced or coordinated the creation of the laboratory report.	reference(100)	<u>In format:</u> PractitionerRole/<resource id> <u>Related fields:</u> [Laboratory test request performing laboratory name]	M	M	M	NA
resultsInterpreter.reference	[resource id] of authorizing PractitionerRole who authorized the laboratory report.	reference(100)	<u>In format:</u> PractitionerRole/<resource id> <u>Related fields:</u> [Laboratory report authorized healthcare staff English name] [Laboratory report authorized healthcare staff Chinese name]	NA	O	O	NA
specimen.reference	[resource id] of Specimen resource related to laboratory result	reference(100)	<u>In format:</u> Specimen/<resource id> <u>Related fields:</u> [Specimen type local code] [Specimen type local description] [Specimen Details] [Specimen arrival datetime] [Specimen collection datetime]	O			NA
result.reference	[resource id] of Observations that are part of this diagnostic report. <i>Multiple occurrences if more than 1 organisms or more than one general observations</i>	reference(100)	<u>In format:</u> Observation/<resource id>	NA	M	M	NA
presentedForm	Report Details	Attachment					
presentedForm.data	Laboratory report (PDF)	base64Binary	E.g: "presentedForm": [M	O	O	NA

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
presentedForm.url	File name of Laboratory Report (PDF) The value must be started with "file:///".	url	{ "contnt": "application/pdf", "data": [Laboratory report (PDF) in base64] , "url": "file:///[[PDF File name]]", "creation": [Laboratory report date] }] <u>Mandatory</u> if Laboratory Report (PDF) is provided	M	M*	M*	NA
presentedForm.creation	[Laboratory report date] The documentation date of the laboratory report	dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz E.g. "2023-10-20T00:00:00.000+08:00"	O	O	O	NA

4.3.5 Data Elements in ServiceRequest

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value:</u> "ServiceRequest" <u>Mandatory</u> if [Laboratory test order number] is given	M*	M	M	M*
id	[resource id] of ServiceRequest reference by DiagnosticReport A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string (45)	The resource id identifies the LABMB relevant to the ServiceRequest resource. <u>Mandatory</u> if [Laboratory test order number] is given	M*	M	M	M*
identifier	[Laboratory test order number] A unique identifier issued by the healthcare institution who made the laboratory test order <u>For e-Referral consent, provide value with the format:</u> <u><Referring HCP ID>:<Referral document reference number></u> e.g 8088450656:12345678900000000306	string(40)	E.g: "identifier": [{ "system": " [HCP FHIR URL] /OrderNum", "value": " [Laboratory test order number] " }]	O	O	O	O
status	Request status	string(9)	<u>Fixed value:</u> "completed" <u>Mandatory</u> if [Laboratory test order number] is given	M	M	M	M*

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
coding.system	[Specimen type - recognised terminology name] Name of recognised terminology set for [Specimen type]. - HKCTT - SNOMED CT	string(30)	Permissible url : • [EHR FHIR URL] /HKCTT • http://snomed.info/sct E.g. "coding": [{ "system": " [EHR FHIR URL] /HKCTT", "code": " [Specimen type identifier - recognised terminology] ", "display": " [Specimen type description - recognised terminology] " }]	NA	NA	M*	NA
coding.code	[Specimen type identifier - recognised terminology] Unique identifier of [Specimen type] in the recognised terminology.	string(30)		NA	NA	O	NA
coding.display	[Specimen type description - recognised terminology] Description of [Specimen type] in the recognised terminology. It should be the corresponding description of the selected [Specimen type identifier - recognised terminology].	string(255)	[Specimen type - recognised terminology name] is <u>mandatory</u> for Level 3 if [Specimen type identifier - recognised terminology] is given, else <u>N/A</u> . [Specimen type description - recognised terminology] is <u>mandatory</u> for Level 3 if [Specimen type identifier - recognised terminology] is given, else <u>N/A</u> .	NA	NA	M*	NA
type	Local Specimen Type						
coding.code	[Specimen type local code] Local code for the [Specimen type] issued by the performing laboratory	string(30)	E.g. "coding": [{ "system": " [HCP FHIR URL] /SpecimenType", "code": " [Specimen type local code] ", "display": " [Specimen type local description] " }]	O	O	O	NA
coding.display	[Specimen type local description] Local description for the [Specimen type] issued by the performing laboratory	string(255)	<u>Mandatory</u> for Level 3 if [Specimen type identifier - recognised terminology] is given, else <u>N/A</u> .	O	O	M*	NA
receivedTime	[Specimen arrival datetime] The date/time when the specimen was received at the laboratory. The actual time that is recorded is based on how specimen receipt is managed and may correspond to the time the sample is logged in. This is different from [Specimen Collection Datetime].	dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz E.g." 2012-01-4T14:00:30.000+08:00"	NA	O	O	NA
collection collectedDate Time	[Specimen collection datetime] The date and time when the specimen was collected.	dateTime(29)	<u>In format:</u> YYYY-MM-DDThh:mm:ss.sss+zz:zz E.g." 2012-01-4T14:00:30.000+08:00"	NA	O	O	NA

4.3.7 Data Elements in PractitionerRole resource

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value:</u> “PractitionerRole”	M	M	M	NA
id	[resource id] of PractitionerRole reference by DiagnosticReport A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string (45)	The resource id identifies the PractitionerRole who produces or creates the LABMB result relevant to DiagnosticReport.	M	M	M	NA
practitioner.reference	[resource id] of Practitioner resource <u>Authorizing Role</u> [Laboratory report authorised healthcare staff English name] [Laboratory report authorised healthcare staff Chinese name] <u>Requester Role</u> [Laboratory test requesting doctor]	reference(100)	<u>In format:</u> Practitioner/<resource id> E.g: "practitioner": { "reference": "Practitioner/8d46812c-4345-45ca-b9ff-ec325816c416" }	NA	O	O	NA
organization.reference	[resource id] of Organization resource <u>Performer Role</u> [Laboratory test request performing laboratory name] <u>Requester Role</u> [Laboratory test request healthcare institution identifier] [Laboratory test request healthcare institution long name] [Laboratory test request healthcare institution local name]	reference(100)	<u>In format:</u> Organization/<resource id> <u>Mandatory if</u> [Laboratory test request performing laboratory name] for Performer Role is given; else <u>Optional</u>	M*	M*	M*	NA

4.3.8 Data Elements in Practitioner resource

The Practitioner Resources is referenced by the PractitionerRole Resource to identify the Healthcare Staff who requested or authorized related LABMB result.

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string (12)	<u>Fixed value:</u> “Practitioner”	M			NA

JSON Name	Data Value	FHIR Data Type	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenar io
id	[resource id] reference by PractitionerRole A UUID represented as a URI (RFC 4122) Please see reference website in appendix	string (45)	The resource id identifies the Healthcare staff who authorised the Laboratory Report relevant to DiagnosticReport.	M			NA
Requester Role : Laboratory requesting doctor							
name.text	[Laboratory test requesting doctor] Full name (with title) of the clinician who requested the laboratory investigations.	string(100)	E.g. "name": [{ "text": "[Laboratory test requesting doctor]" }]]	NA	O	O	NA
Authorizing Role : Laboratory report authorised healthcare staff							
extension 1003524-LabReportAuth hCSChinese Name	[Laboratory report authorised healthcare staff Chinese name] Full Chinese name (with title, if applicable) of the healthcare staff who authorised the laboratory report. For auto-authorised reports, the Laboratory Report Authorised Person can be a local description of an auto-analyzer.	extension url string(10)	Fixed length: 10 "url": "[eHR FHIR URL]/1003524-LabReportAuthHCSChineseName", "valueString": "[Laboratory report authorised healthcare staff Chinese name]"	NA	O	O	NA
name.text	[Laboratory report authorised healthcare staff English name] Full name in English of the healthcare staff who authorised the laboratory report. For auto-authorised reports, the Laboratory Report Authorised Person can be a local description of an auto-analyzer.	string(100)	E.g. "name": [{ "text": "[Laboratory report authorised healthcare staff English name]" }]]	NA	O	O	NA

4.3.9 Data Elements for the Observation resource (Category:RSLT)

The information about an observation which related to general result or microbiology culture result.

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string(9)	<u>Fixed Value:</u> "Observation"	NA	M	M	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
id	<p>[resource id] reference by DiagnosticReport resource</p> <p>A UUID represented as a URI ()</p> <p>Please see reference website in appendix</p>	string(45)	This id identifies the Observation information related to LABMB records which are included in the current bundle.	NA	M	M	NA
extension 99999999- LabTestResultTy pe	<p>[Laboratory test result type] Result type of the test result</p> <p>If valueDecimal.value =1, place the test result [Laboratory test numeric result]</p> <p>If valueDecimal.value = 2, place the test result to [Laboratory test enumerated result]</p> <p>If valueDecimal.value = 3, place the test result to [Laboratory test text result]</p>	valueDecima l	<p>valueDecimal: decimal</p> <p><u>Permissible values:</u> 1 : Numeric 2 : Enumerated 3 : Text</p> <p>E.g. { "url": "[eHR FHIR URL]/99999999- LabTestResultType", "valueDecimal": [Laboratory test result type] }</p>	NA	M	M	NA
extension 1003543- LabTestNumeric Result	<p>[Laboratory test numeric result] The value observed by the performing laboratory in numerical format.</p> <p>If [Laboratory test Result Type] = 1, place the test result to this extension.</p>	valueDecima l (16)	<p>valueDecimal: decimal</p> <p>E.g. { "url": "[eHR FHIR URL]/1003543- LabTestNumericResult", "valueDecimal": [Laboratory test numeric result] }</p>	NA	O	O	NA
extension 1003544- LabTestEnumRe sult	<p>[Laboratory test enumerated result] The enumerated result identifier reported by the performing laboratory.</p> <p>e.g. positive, negative, +, ++, +++, present, absent.</p> <p>If [Laboratory test Result Type] = 2, place the test result to this extension.</p>	string(80)	<p>E.g. { "url": "[eHR FHIR URL]/1003544- LabTestEnumResult", "valueString": "[Laboratory test enumerated result]" }</p>	NA	O	O	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
extension 1003554- LabTestTextResult	[Laboratory test text result] The laboratory test result observable value component in text format. If [Laboratory test Result Type] = 3, place the test result to this extension.	string(32768)	E.g.: { "url": "[eHR FHIR URL] /1003554- LabTestTextResult", "valueString": "[Laboratory test text result]" }	NA	O	O	NA
extension 1003555- LabTestResultNote	[Laboratory test text result] The additional information of individual test. e.g. test repeated	string(2000)	E.g.: { "url": "[eHR FHIR URL]/1003555- LabTestResultNote", "valueString": "[Laboratory test text result]" } <u>Mandatory</u> if [Laboratory test reportable result] and [Laboratory report comment] are ALL blank, else <u>Optional</u> .	NA	M*	M*	NA
extension 1005598- LabTestUsableResult	[Laboratory test usable result] A selected value observed by the performing laboratory in numerical format which allow secondary use in charting and calculation. The value should be a valid numeric figure that falls in detection limit and suitable for secondary use	valueDecimal(16)		NA	O	O	NA
extension 1003552- LabTestResultUnit	[Laboratory test result unit] The additional information of individual test. For example, Sodium test repeated.	string(50)		NA	M*	M*	NA
extension 1003546- DetectionLimitIndicatorCode	[Detection limit indicator code] eHR value of the "Detection limit indicator" code table to identify whether the result is out of the detection limit of the test. For example, < Less than; > Greater than.	string(5)	E.g.: { "url": "[eHR FHIR URL]/1003546- DetectionLimitIndicatorCode", "valueString": "[Detection limit indicator code]" }	NA	O	O	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
coding.system coding.code	Classification of type of observation	string(5)	Fixed Value : "RSLT" E.g. "category": [{ "coding": [{ "code": "RSLT" }] }]	M			NA
code	Code of the observation						
Recognized terminology							
coding.system	[Laboratory test name - recognised terminology name] or [Microbiology culture test – recognised terminology name] Name of the recognised terminology set for the microbiology test including the general lab test or culture test . - HKCTT - LOINC	string(255)	<u>Permissible url for coding systems:</u> <ul style="list-style-type: none">[EHR FHIR URL]/HKCTThttp://loinc.org E.g: "code": { "coding": [{ "system": " [permissible url] ", "code": " [Laboratory test name identifier - recognised terminology] ", "display": " [Laboratory test name description - recognised terminology] " }] } Or "code": { "coding": [{ "system": " [permissible url] ", "code": " [Microbiology culture test identifier - recognised terminology] ", "display": " [Microbiology culture test description - recognised terminology] " }] }	NA	NA	M	NA
coding.code	[Laboratory test name identifier - recognised terminology] or [Microbiology culture test identifier - recognised terminology] Unique identifier of laboratory test name in the recognised terminology.	string(50)		NA	NA	M	NA
coding.display	[Laboratory test name description - recognised terminology] or [Microbiology culture test description - recognised terminology] Description of Laboratory Test Name in the recognised terminology. It should be the corresponding description of the coding.code For HKCTT, use [eHR Description] For LOINC, use [Long Common Name]	string(255)		NA	NA	M	NA
HCP local terminology							
coding.system	url for coding the local test name and description	string(255)	E.g: "code": {	NA	M	M	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
coding.code	[Laboratory test name local code] Or [Microbiology culture test local code] Local code for the laboratory test name issued by the performing laboratory.	string(50)	"coding": [{ "system": "[HCP FHIR URL]/LabTest", "code": "[Laboratory test name local code]", "display": "[Laboratory test name local description]" }]	NA	M*	M*	NA
coding.display	[Laboratory test name local description] Or [Microbiology culture test local description] Local description for the laboratory test name issued by the performing laboratory.	string(255)	}] } Or "code": { "coding": [{ "system": "[HCP FHIR URL]/LabTest", "code": "[Microbiology culture test local description]", "display": "[Microbiology culture test local description]" }] } <u>Mandatory</u> if [Organism and susceptibility test result indicator] = 1	NA	M	M	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
valueString	[Laboratory test reportable result] The reporting result to be displayed in the eHR Viewer. This includes results in numeric and string data.	string(255)	<p>E.g:</p> <pre>{ "url": "[eHR FHIR URL]/1003545-LabReportableResult", "valueString": "[Laboratory test reportable result]" }</pre> <p><u>Mandatory</u> if [Laboratory test result note] and [Laboratory report comment] are ALL blank while [Laboratory test numeric result] or [Laboratory test enumerated result] or [Laboratory test text result] is not blank, else <u>Optional</u>.</p> <p>If [Laboratory test text result] is provided, the first 255 characters should be copied to [Laboratory test reportable result].</p>	NA	M*	M*	NA
interpretation	Abnormal indicator information						
coding.system	Link to abnormal result indicator coding system	String(255)	<p>E.g.</p> <pre>"interpretation": [{ "coding": [{ "system": "[eHR FHIR URL]/AbnormalResultIndCode", "code": "[Abnormal result indicator code]", "display": "[Abnormal result indicator description]", }], "text": "[Abnormal result indicator local description]" }]</pre>	NA	O	O	NA
coding.code	[Abnormal result indicator code] eHR value of the "Abnormal Result Indicator" code table, indicating the normality status of the result. For example, L = Low; H = High.	string(5)		NA	O	O	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
coding.display	[Abnormal result indicator description] eHR description of the "Abnormal Result Indicator" code table indicating the normality status of the result. The [Abnormal result indicator description] should be the corresponding description of the selected the selected [Abnormal result indicator code].	string(255)	<u>Mandatory</u> if [Abnormal result indicator code] is given, else N/A. <u>Permissible values:</u> <ul style="list-style-type: none"> Low High Refer to the code set of "Abnormal result indicator" in Self-Service Kit . The latest code set in eHealth website shall prevail.	NA	M*	M*	NA
text	[Abnormal result indicator local description] The local description issued by the performing laboratory indicating the normality status of the result.	string(255)	<u>Mandatory</u> if [Abnormal result indicator code] is given, else <u>Optional</u> .	NA	M*	M*	NA
referenceRange.text	[Laboratory test reference range] Information about appropriate reference range for a specific result observable	string(2000)	E.g. "referenceRange": [{ "text": "[Laboratory test reference range]" }]	NA	O	O	NA
hasmember.reference	[resource id] of Observation resource <i>The no. of hasMember depends on the no. of Organisms for the Culture and Other observations i.e. if [Organism and susceptibility test result indicator] = 0, hasMember.reference may not exists</i>	reference(100)		NA	O	O	NA

4.3.10 Data Elements for the Observation resource (Category:Organism)

The information about an observation which related to organism information about the culture result. This observation resource exists only when the LAMB record contains the Organism and Susceptibility test information ([99999999-StresultIndicator]=1).

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string(9)	<u>Fixed Value:</u> " Observation "	NA	M	M	NA
id	[resource id] reference by Observation resource which with Category = "RSLT" A UUID represented as a URI () Please see reference website in appendix	string(45)	This id identifies the Observation information related to an Organism which is included in DiagnosticReport.	NA	M	M	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/ O	Delete Scenar io
identifier	[Organism key] An unique identifier for each organism to link to its corresponding Microbiology test result	string(30)	Example: "identifier": [{ "value": "[Organism key]" }] <u>Mandatory</u> if [Organism and susceptibility test result indicator] = 1	NA	M*	M*	NA
status	Observation status <i>eHR would not interpret this value</i>	string(5)	Fixed Value : " final "	NA	M	M	NA
category							
coding.system coding.code	Classification of type of observation	string(8)	Fixed Value : " organism " E.g. "category": [{ "coding": [{ "code": " organism " }] }]]	NA	M	M	NA
code	Code of the Organism						
Recognized terminology							
coding.system	[Organism - recognised terminology name] Name of the recognised terminology set for general laboratory test name. - HKCTT - SNOMED CT <i>If eHR value = HKCTT, allowable nature is "Organism" If eHR value = SNOMED CT, allowable hierarchy is "Organism"</i>	string(255)	<u>Permissible url for coding systems:</u> [EHR FHIR URL] /HKCTT http://snomed.info/sct E.g: "code": { "coding": [{ "system": " [permissible url] ", "code": " [Organism - recognised terminology name] ", "display": " [Organism description - recognised terminology] "	NA	NA	M*	NA
coding.code	[Organism identifier - recognised terminology] Unique identifier of the reported organism in the recognised terminology	string(30)		NA	NA	M*	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/ O	Delete Scenar io
coding.display	<p>[Organism description - recognised terminology] Description of the reported organism in the recognised terminology. It should be the corresponding description of the selected [Organism Identifier - Recognised Terminology].</p> <p>For HKCTT, use [eHR Description] For SNOMED CT, use [Preferred Name]</p>	string(255)	<pre>}]</pre> <p>[Organism - recognised terminology name] and [Organism description - recognised terminology] are <u>mandatory</u> for Level 3 if [Organism identifier - recognised terminology] is given, else N/A.</p> <p>[Organism identifier - recognised terminology] is <u>mandatory</u> for Level 3 if [Microbiology culture finding text result] is blank, else <u>Optional</u>.</p>	NA	NA	M*	NA
HCP local terminology							
coding.system	url for coding the local organism name and description	string(255)	<p>E.g:</p> <pre>"code": { "coding": [{ "system": "[HCP FHIR URL]/OrganismLocalCode", "code": "[Organism local code]", "display": "[Organism local description]" }] }</pre> <p><u>Mandatory</u> for Levels 2 and 3 if [Microbiology culture finding text result] is blank, else <u>Optional</u>.</p>	NA	O	O	NA
coding.code	[Organism local code] Local code for the reported organism issued by the performing laboratory	string(30)		NA	O	O	NA
coding.display	[Organism local description] Local description for the reported organism issued by the performing laboratory	string(255)		NA	M*	M*	NA
valueString	[Microbiology culture finding text result] This field contains the laboratory finding of a microbiology culture test in string	string(255)	<p>Example:</p> <pre>"valueString": "[Microbiology culture finding text result]"</pre> <p><u>Mandatory</u> for Levels 2 and 3 if [Organism local description] is blank, else <u>Optional</u></p>	NA	M*	M*	NA

4.3.11 Data Elements for the Observation resource (Category:Growth)

The information about an observation which related to LABMB issued.

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/ O	Delete Scenar io
resourceType	Resource name	string(9)	Fixed Value: " Observation "	NA	M	M	NA
id	[resource id] reference by Observation resource which with Category = "RSLT" A UUID represented as a URI () Please see reference website in appendix	string(45)	This id identifies the Observation information related to an Organism which is included in DiagnosticReport.	NA	M	M	NA
status	Observation status <i>eHR would not interpret this value</i>	string(5)	Fixed Value : " final "	NA	M	M	NA
category							
coding.system coding.code	Classification of type of observation	string(5)	Fixed Value : " growth " E.g. "category": [{ "coding": [{ "code": " growth " }] }]	NA	M	M	NA
code	Code defined by a terminology system <i>As this growth observation is the members of the Organism Observation, the "Data Absent Reason" extension is used.</i>	string	Fixed value: "code": { "extension": [{ "url": "http://hl7.org/fhir/Structure Definition/data-absent- reason", "valueCode": "not- applicable" }] }	NA	M	M	NA
valueString	[Organism growth description text result] This field contains the laboratory finding of a microbiology culture test in string	string(2000)	E.g: "valueString": "[Organism growth description text result]"	NA	O	O	NA

4.3.12 Data Elements for the Observation resource (Category: Susceptibility Test)

The information about an observation which related to LABMB issued.

[illegible]

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/ O	Delete Scenar io
coding.system	[Susceptibility test and related property - recognised terminology name] Name of the recognised terminology set for susceptibility test and related property. See [Susceptibility test and related property local description] for details of susceptibility test and related property. - HKCTT - LONIC	string(255)	Permissible url for coding systems: [EHR FHIR URL]/HKCTT http://snomed.info/sct E.g: "code": { "coding": [{ "system": "[permissible url]", "code": "[Susceptibility test and related property - recognised terminology name]", "display": "[Susceptibility test and related property identifier - recognised terminology]" }] }	NA	NA	M*	NA
coding.code	[Susceptibility test and related property identifier - recognised terminology] Name of the recognised terminology set for susceptibility test and related property. See [Susceptibility test and related property local description] for details of susceptibility test and related property.	string(30)		NA	NA	M*	NA
coding.display	[Susceptibility test and related property description - recognised terminology] Description of susceptibility test and related property in the recognised terminology. It should be the corresponding description of the selected [Susceptibility test and related property identifier - recognised terminology]. See [Susceptibility test and related property local description] for details of susceptibility test and related property. For HKCTT, use [eHR Description] For LOINC, use [Long Common Name]	string(255)	[Susceptibility test and related property - recognised terminology name] and [Susceptibility test and related property description - recognised terminology] are Mandatory if [Susceptibility test and related property identifier - recognised terminology] is given	NA	NA	M*	NA
HCP local terminology							
coding.system	url for coding the local Susceptibility test	string(255)	E.g: "code": { "coding": [{ "system": "[HCP FHIR URL]/STcode", "code": "[Susceptibility test and related property identifier - recognised terminology]" }] }	NA	O	O	NA
coding.code	[Susceptibility test and related property local code] Local code for the reported organism issued by the performing laboratory	string(30)		NA	O	O	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/ O	Delete Scenar io
coding.display	<p>[Susceptibility test and related property local description] Local description for the susceptibility test and related property issued by the performing laboratory</p> <p>A susceptibility test and related property is considered as a reflex test when pathogenic organism was isolated. Generally, antibiotic susceptibility test/antibiotic sensitivity test are always included.</p>	string(255)	<p>"code": "[Susceptibility test and related property local code]", "display": "[Susceptibility test and related property local description]" } } } <u>Mandatory</u> for Level 3 if [Susceptibility test and related property identifier - recognised terminology] is given, else N/A.</p> <p>Antibiotic resistant property related test include but not limit to : Double disc synergy testing on extended spectrum beta lactamase production Cefinase disc detection on production of Beta-lactamase Antibiotic resistance gene detected by molecular technology</p>	NA	O	M*	NA
valueCodeableConcept		string(3)					
valueCodeableConcept.coding.system	The value of system is always "https://ehealth.gov.hk/FHIR/HCP/local/STLocalcode".	string(30)	<p><u>Fixed value:</u> "[HCP FHIR URL]/STLocalcode"</p> <p>E.g. "valueCodeableConcept": { "coding": [{ "system": "[HCP FHIR URL]/STLocalcode", "code": "[Susceptibility test and related property result code]", "display": "[Susceptibility test and related property result local description]" }] }</p>	NA	NA	M*	NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/ O	Delete Scenar io
valueCodeableC oncept.coding.c ode	[Susceptibility test and related property result code] [eHR value] of the "Susceptibility test and related property result" code table.		Mandatory for Level 3 if [Susceptibility test and related property identifier - recognised terminology] is given, else N/A. Refer to the code set of "Susceptibility test and related property result" in Self-Service Kit . The latest code set in eHealth website shall prevail.	NA	NA	M*	NA
valueCodeableC oncept.text	[Susceptibility test and related property result local description] Local description of the susceptibility test and related property result. A susceptibility test and related property must have a interpreted result and should be reported together.	string(255)	Mandatory for Level 3 if [Susceptibility test and related property result code] is given, else N/A.	NA	O	M*	NA

4.3.13 Data Elements for the Encounter resource

An interaction during which services are provided to the patient.

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
resourceType	Resource name	string(9)	<u>Fixed Value:</u> "Encounter"	M			NA
id	[resource id] reference by DiagnosticReport 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 LABMB records which are included in the current bundle.	O			NA
99999999- AttendanceI nstIdentifier	[Attendance institution identifier] eHRSS assigned [Healthcare Institution Identifier] (HCI ID) of the healthcare institution where the HCR receives the service.	string(10)	<u>Fixed length:10</u> <i>E.g.</i> "extension": [{ "url": "[eHR FHIR URL]/99999999- AttendanceInstIdentifier", "valueString": "[Attendance institution identifier]" }]	O			NA

JSON Name	Data Value Data Definition	FHIR Data Type (Max Length)	Remarks	L1 M/O	L2 M/O	L3 M/O	Delete Scenario
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 <i>eHRSS will not interpret the value.</i>	code	Fixed Value : "finished"		M		NA
Class	Classification of patient encounter <i>eHRSS will not interpret the value.</i>	Coding	<u>Fixed Value:</u> "class": { "system": "[eHR FHIR URL]/class", "code": "UNKNOWN", "display": "Unknown status"} }		M		NA

5. Image File (PDF)

The details of PDF naming convention

File Name	<HCP ID>.<Sending Location Code>.<Record Type>.<Record Key>.<Original File Name>.<File Extension>.<eHR Number>.<Generation Date> where the <Record Type> is “LABMB”
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E.g.

8088450656.BRANCHA.LABMB.LABMB-001.123.pdf.201000000001.20231030150000

1. The file name must be in capital letters except pdf extension.
2. Dot “.” is used as file name delimiters and hence the value of each file name component must not contain dot “.”

The table below listed the file name components and their respective definitions:

Seq	File name Component	Definition	Length	Remarks	M/O
1	HCP ID	A unique identifier assigned to an eHealth Healthcare Provider by eHRSS	string(10)	<u>Fixed Length:</u> 10 e.g. 8088450656	M
2	Sending Location Code	A code agreed between eHRSS and the HCP which indicates the location where the data is sending from.	string(20)	Use [HCP ID] if sending location cannot be provided. <u>Format:</u> Any combination of the following alphanumeric characters: [A-Z][0-9][-_]	M
3	Record Type	A standardised code to identify the data domain	string(5)	Refer to defined Dataset Code e.g. LABMG	M
4	Record Key	A unique identifier for a record within the HCP’s EMR system	string(50)	e.g. LABMB-001	M
5	Original File Name	The file name used in source institution	string(100)	e.g. 123	M
6	File Extension	pdf (Portable Document Format File)	string(3)	Fixed value: pdf	M
7	eHR Number	A unique HCR identifier assigned by eHRSS	string(12)	<u>Fixed length:</u> 12 e.g. 201000000001	M
8	Generation Date	File generation date. It should be the same value of the [composition.date]	string(14)	<u>In format:</u> YYYYMMDDhhmmss e.g. 20231030150000	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.

Level 3 Template:

<pre> { "resourceType": "Bundle", "identifier": { "system": "urn:ietf:rfc:4122", "value": "d2f9f649-5555-4826-868b-84e015c1f1be" }, "type": "document", "timestamp": "2023-10-30T15:00:00.000+08:00", "entry": [{ "fullUrl": "Composition/2fb40fdc-db52-4a80-991c-b352384c965a", "resource": { "resourceType": "Composition", "id": "2fb40fdc-db52-4a80-991c-b352384c965a", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/99999999-SendingLocation", "valueString": "BRANCHA" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-ComplianceLevel", "valueString": "3" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-DomainVersion", "valueString": "eHRSS-1.4.1" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-UploadMode", "valueString": "NBL" }], "status": "final", "type": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/", "display": "Hong Kong eHR Healthcare Document" }] }, "subject": { "reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616" }, "date": "2023-10-30T15:00:00.000+08:00", </pre>	<p>Bundle Resource - [Resource id for Bundle]</p> <p>[current time]</p> <p>- [fullUrl for Composition] Composition Resource [resource id for Composition]</p> <p>- [Sending location] [Compliance level]</p> <p>Fixed value</p> <p>- [Upload mode]</p> <p>Link to Patient Resource - [Message generation time]</p> <p>Link to</p>
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<pre> "author": [{ "reference": "PractitionerRole/4037da57-d98b-400b-93fe-3d918f6aa7c8" }], "title": "Hong Kong eHR Healthcare Document", "section": [{ "title": "Laboratory Result (Microbiology Result) Records", "code": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/datadomain", "code": "LABMB", "display": "Laboratory Result (Microbiology Result) Records" }] }, "entry": [{ "extension": [{ "url": "https://ehealth.gov.hk/FHIR/99999999- RecordCreateDatetime", "valueDateTime": "2015-12-16T02:31:00.000+08:00" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- RecordCreateInstIdentifier", "valueString": "3098159131" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- RecordCreateInstName", "valueString": "PWH" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- RecordLastUpdateDatetime", "valueDateTime": "2015-12-16T02:31:00.000+08:00" }, { "url": "https://ehealth.gov.hk/FHIR/99999999- RecordUpdateInstIdentifier", </pre>	<p>Organization Resource</p> <p>- [Record creation datetime]</p> <p>- [Record creation institution identifier]</p> <p>- [Record creation institution name]</p> <p>- [Record last update datetime]</p> <p>- [Record update institution identifier]</p>
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<pre> "valueString": "3098159131" }, { RecordUpdateInstName", "url": "https://ehealth.gov.hk/FHIR/99999999- "valueString": "PWH" }, { TransactionDateTime", "url": "https://ehealth.gov.hk/FHIR/99999999- "valueDateTime": "2015-12-16T02:31:00.000+08:00" }, { "url": "http://ehealth.gov.hk/FHIR/99999999-TransactonType", "valueString": "U" }, { LastUpdateDateTime", "url": "https://ehealth.gov.hk/FHIR/99999999- "valueDateTime": "2015-12-16T02:31:00.000+08:00" }], "reference": "DiagnosticReport/534922e6-1e05-4b08-b0b3- 068773c12658", "identifier": { "system": "https://ehealth.gov.hk/FHIR/HCP/local/Recordkey", "value": "PWH715B295000" } }] }] }, { "fullUrl": "Organization/3b3703a9-7a26-427c-9352-4e41f046d85e", "resource": { "resourceType": "Organization", "id": "3b3703a9-7a26-427c-9352-4e41f046d85e", "name": "Hospital A" } }, { "fullUrl": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616", </pre>	<pre> - [Record update institution name] - [Transaction datetime] - [Transaction type] - [Last Update datetime] Link to DiagnosticReport resource [Record Key] -[fullUrl for Organization] Organization Resource - [Resource id for Organization resource] - [Healthcare institution long name] </pre>
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<pre> "resource": { "resourceType": "Patient", "id": "d58dd75b-cf09-4a1c-b913-c9e867f27616", "identifier": [{ "type": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/typeofID-ext", "code": "EHRNO" }] }, "value": "234567808800" }, { "type": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/typeofID-ext", "code": "ID" }] }, "value": "Q1730351" }], "name": [{ "text": "CHAN, MAN MAN", "family": "CHAN", "given": ["MAN MAN"] }], "gender": "male", "birthDate": "1960-01-60" } }, { "fullUrl": "DiagnosticReport/534922e6-1e05-4b08-b0b3-068773c12658", "resource": { "resourceType": "DiagnosticReport", </pre>	<p>-[fullUrl for Patient] Patient (HCR) Resource - Resource id for Patient resource]</p> <p>Fixed value</p> <p>- [eHR Number]</p> <p>-[Type of identity document]</p> <p>-[Document number]</p> <p>- [English full name] - [English surname] - [English given name]</p>
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<pre> "id": "534922e6-1e05-4b08-b0b3-068773c12658", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/1003520-LabReportStatusDesc", "valueString": "F" }, { "url": "https://ehealth.gov.hk/FHIR/1003521-LabReportStatusLocalDesc", "valueString": "Unspecified report status" }, { "url": "https://ehealth.gov.hk/FHIR/1003529-LabReportText", "valueString": "Same content as the PDF", }], "identifier": [{ "system": "https://ehealth.gov.hk/FHIR/HCP/local/RequestNum", "value": "15B2945000" }], "basedOn": [{ "reference": "ServiceRequest/8030e4f9-573d-4ceb-a429-aaf2cdfbabd3" }], "status": "final", "category": [{ "coding": [{ "system": "https://ehealth.org.hk/FHIR/LabCatCode", "code": "MICRO", "display": "Microbiology & Virology" }], "text": "Microbiology" }], "code": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/HCP/local/PanelCode", "code": "C&ST", </pre>	<pre> - [Sex] - [Date of Birth] -[fullUrl for DiagnosticReport] DiagnosticReport Resource -[Resource id for DiagnosticReport resource] - [Laboratory report status description] - [Laboratory report status local description] -[Laboratory report comment] -[Laboratory report (text)] -[Laboratory test request number] Link to ServiceRequest Resource -[Laboratory category code] </pre>
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<pre> "display": "C&ST" }] }, "subject": { "reference": "Patient/d58dd75b-cf09-4a1c-b913-c9e867f27616" }, "effectiveDateTime": "2015-12-10T11:48:00.000+08:00", "issued": "2015-12-12T10:22:00.000+08:00" "performer": [{ "reference": "PractitionerRole/21c6828c-b175-4a3b-b6de-6eaf69335021" }], "resultsInterpreter": [{ "reference": "PractitionerRole/fc347242-e2ba-46a7-8333-4dadb6ed4d71" }], "specimen": [{ "reference": "Specimen/afeae3fd-7b0b-4d51-a683-d4668cf9d9fa" }], "result": [{ "reference": "Observation/42dae2a6-fa05-41ce-b5d2-78655d244f01" }, { "reference": "Observation/94c026f3-10a2-4db3-9b57-ba874e42e52b" }], "presentedForm": [{ "contentType": "application/pdf", "data": "JVBERi0xLjcNCiW1tbW1DQoxIDAgb2JqDQo8PC9UeX==Cover many lines", "url": "file:///3098159131.DM.LABMB.PWH715B2945057.PWH_LIS_20151216_MBS_MBLNQ_151216180614180ICN_15B2945057 MBLENQ-00_PDF.pdf.201000000001.20231030150000" "creation": "2015-12-10T18:06:00.000+08:00" }] } </pre>	<pre> - [Laboratory category description] - [Laboratory category local description] - [Panel local code] [Panel local description] Link to Patient resource - [Laboratory report reference datetime] - [Laboratory report authorized datetime] - Link to PractitionerRole Resources Link to Specimen Resource Link to Observation Resources </pre>
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<pre> }, { "fullUrl": "Observation/42dae2a6-fa05-41ce-b5d2-78655d244f01", "resourceType": "Observation", "id": "42dae2a6-fa05-41ce-b5d2-78655d244f01", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/99999999-LabTestResultType", "valueDecimal": 3 }, { "url": "https://ehealth.gov.hk/FHIR/1003543-LabTestNumericResult" }, { "url": "https://ehealth.gov.hk/FHIR/1005598-LabTestUsableResult" }, { "url": "https://ehealth.gov.hk/FHIR/1003552-LabTestResultUnit" }, { "url": "https://ehealth.gov.hk/FHIR/99999999-STresultIndicator", "valueString": "0" }], "status": "final", "category": [{ "coding": [{ "code": "RSLT" }] }], "code": { "coding": [{ "system": "http://ehealth.gov.hk/FHIR/HKCTT", "code": "5200937", "display": "Bacteria identified in Body fluid by Culture" }, { "system": "https://ehealth.gov.hk/FHIR/HCP/local/LabTest", "code": "BF_GRAM", </pre>	<pre> - [PDF in Base64] - [PDF file name] - [Laboratory report date] -[fullUrl for Observation] -[Resource id for Observation resource] -[Laboratory Test Result Type] -[Laboratory test numeric result] -[Laboratory test usable result] -[Laboratory test result unit] -[Organism and susceptibility test result indicator] Fixed value </pre>
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<pre> "display": "Gram stain :"</pre>	- URL contains
<pre> }] }, "valueString": "Large numbers of WBC seen. A few Gram negative bacilli see"</pre>	[Laboratory test name - recognised terminology name]
<pre> }, { "fullUrl": "Observation/94c026f3-10a2-4db3-9b57-ba874e42e52b" { "resourceType": "Observation", "id": "94c026f3-10a2-4db3-9b57-ba874e42e52b", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/99999999-LabTestResultType", "valueDecimal": 2 }, { "url": "https://ehealth.gov.hk/FHIR/1003543-LabTestNumericResult", "valueDecimal": 23302 }, { "url": "https://ehealth.gov.hk/FHIR/1005598-LabTestUsableResult", "valueDecimal": 23302 }, { "url": "https://ehealth.gov.hk/FHIR/1003552-LabTestResultUnit", "valueString": "umol/L" }, { "url": "https://ehealth.gov.hk/FHIR/1003544-LabTestEnumResult", "valueString": "20677" }, { "url": "https://ehealth.gov.hk/FHIR/1003554-LabTestTextResult" }, { "url": "https://ehealth.gov.hk/FHIR/1003555-LabTestResultNote", "valueString": "Test repeated" },], { "url": "https://ehealth.gov.hk/FHIR/99999999-STresultIndicator", "valueString": "1" } } }</pre>	-[Laboratory test name identifier - recognised terminology]
	-[Laboratory test name description - recognised terminology]
	-[Laboratory test name local code]
	-[Laboratory test name local description]
	-[Laboratory test reportable result]
	-[fullUrl for Observation]
	[Resource id for Observation resource]
	-[Laboratory Test Result Type]
	-[Laboratory test usable result]
	-[Laboratory test result unit]
	-[Laboratory test enumerated result]

<pre> }], "status": "final", "category": [{ "coding": [{ "code": "RSLT" }] }], "code": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/HKCTT", "code": "5200583", "display": "Bacteria identified in Body fluid by Culture" }, { "system": "https://ehealth.gov.hk/FHIR/HCP/local/LabTest", "code": "BF_ORG", "display": "Body fluid culture :" }] }, "valueString": "MMOR ; MG ;", "hasMember": [{ "reference": "Observation/organism1" }, { "reference": "Observation/susceptibilityTest1" }, { "reference": "Observation/susceptibilityTest2" }, { "reference": "Observation/growth1" }] } }, { </pre>	<pre> -[Laboratory test text result] -[Laboratory test result note] -[Organism and susceptibility test result indicator] -[fullUrl for Organization] - [Resource id for Organization resource] -[Laboratory test request performing laboratory name] - URL contains [Laboratory test name - recognised terminology name] -[Laboratory test name identifier - recognised terminology] -[Laboratory test name description - recognised terminology] -[Laboratory test name local code] -[Laboratory test name local description] -[Laboratory test reportable result] Link to other related resources </pre>
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<pre> "fullUrl": "Observation/organism1" "resource": { "resourceType": "Observation", "id": "organism1", "identifier": [{ "value": "1" }], "status": "final", "category": [{ "coding": [{ "code": "organism" }] }], "code": { "coding": [{ "system": "http://ehealth.gov.hk/FHIR/HKCTT", "code": "5000624", "display": "Enterobacter species" }, { "system": "http://ehealth.gov.hk/FHIR/HCP/local/OrganismLocalCode", "code": "20416", "display": "Enterobacter species" }] }, "valueString": "MMOR ; MG ;()" } }, { "fullUrl": "Observation/susceptibilityTest1", "resource": { "resourceType": "Observation", "id": "susceptibilityTest1", "identifier": [{ "value": "1" </pre>	<pre> -[fullUrl for 1st organism observation] -[Resource id for observation resource] -[Organism key] Fixed value URL contains [Organism - recognised terminology name] -[Organism identifier - recognised terminology] -[Organism description - recognised terminology] -[Microbiology culture finding text result] -[fullUrl for Observation] Observation </pre>
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<pre> }], "status": "final", "category": [{ "coding": [{ "code": "susceptibilityTest" }] }], "code": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/HKCTT", "code": "5200220", "display": "Piperacillin+Tazobactam [Susceptibility]" }, { "system": "https://ehealth.org.hk/FHIR/STcode", "code": "23276", "display": "Piperacillin/tazobactam" }] }, "valueCodeableConcept": { "coding": [{ "system": "https://ehealth.org.hk/FHIR/STresultcode", "code": "I", "display": "Intermediate", }], "text": "Intermediate" } }, { "fullUrl": "Observation/susceptibilityTest2", "resource": { "resourceType": "Observation", "id": "susceptibilityTest2" } } </pre>	<p>Resource</p> <p>[Resource id for Observation resource]</p> <p>-[Susceptibility test and related property sequence number]</p> <p>Fixed value</p> <p>URL contains [Susceptibility test and related property - recognised terminology name]</p> <p>-[Susceptibility test and related property identifier - recognised terminology]</p> <p>-[Susceptibility test and related property description - recognised terminology]</p> <p>-[Susceptibility test and related property local code]</p> <p>-[Susceptibility test and related property local description]</p> <p>-[Susceptibility test and related property result code]</p> <p>-[Susceptibility test and related</p>
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<pre> "identifier": [{ "system": "https://ehealth.gov.hk/FHIR/HCP/local/STSeqNum", "value": "2" }], "status": "final", "category": [{ "coding": [{ "code": "susceptibilityTest" }] }], "code": { "coding": [{ "system": "https://ehealth.gov.hk/FHIR/HKCTT", "code": "5200076", "display": "Cefuroxime Parenteral [Susceptibility]" }, { "system": "https://ehealth.org.hk/FHIR/STcode", "code": "23273", "display": "Cefuroxime (parenteral)", }] }, "valueCodeableConcept": { "coding": [{ "system": "https://ehealth.org.hk/FHIR/STresultcode", "code": "R", "display": "Resistant", }], "text": "Resistant" } } { "fullUrl": "ServiceRequest/8030e4f9-573d-4ceb-a429-aaf2cdfbabd3", </pre>	<p>property result description]</p> <p>-[Susceptibility test and related property result local description]</p> <p>URL contains [Susceptibility test and related property - recognised terminology name]</p> <p>-[Susceptibility test and related property identifier - recognised terminology]</p> <p>-[Susceptibility test and related property description - recognised terminology]</p> <p>-[Susceptibility test and related property local code]</p> <p>-[Susceptibility test and related property local description]</p> <p>-[Susceptibility test and related</p>
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<pre> } }, { "fullUrl": "Observation/growth1", "resource": { "resourceType": "Observation", "id": "growth1", "status": "final", "category": [{ "coding": [{ "code": "growth" }] }], "code": { "extension": [{ "url": "http://hl7.org/fhir/StructureDefinition/data-absent-reason", "valueCode": "not-applicable" }] }, "valueString": "Heavy Growth" } }, { "fullUrl": "Practitioner/8d46812c-4345-45ca-b9ff-ec325816c416", "resource": { "resourceType": "Practitioner", "id": "8d46812c-4345-45ca-b9ff-ec325816c416", "name": [{ "text": "Dr. TM Chan" }] } }, { "fullUrl": "0de7ebaa-de1d-40af-ba4a-b82328180faa", "resource": { </pre>	<pre> terminology] -[Specimen type description - recognised terminology] -[Specimen type local code] -[Specimen type local description] -[Specimen arrival datetime] -[Specimen collection datetime] -[fullUrl for Observation] -[Resource id for Observation resource] Fixed value -[1st Organism growth description text result] -[fullurl for Practitioner] </pre>
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<pre> "resourceType": "Practitioner", "id": "Practitioner/0de7ebaa-de1d-40af-ba4a-b82328180faa", "extension": [{ "url": "https://ehealth.gov.hk/FHIR/1003524- LabReportAuthorizedCStaffChineseName", "valueString": "李醫生" }], "name": [{ "text": "Dr. KK Lee" }] }] } } } </pre>	<pre> -[Resource id for Practitioner resource] -[Laboratory test requesting doctor] -[fullUrl for Practitioner resource] -[Laboratory report authorized healthcare staff Chinese name] -[Laboratory report authorized healthcare staff English name] </pre>
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7. Mapping Tables

7.1 FHIR Administrative Gender

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

7.2 Laboratory report status code

FHIR DiagnosticReport.status	eHR Value of [Laboratory Report Status]	eHR definition
preliminary	P	A provisional report is issued when provisional or partial results become available and report is submitted to eHR. A final report will always follow after the provisional report.
final	F	A completed report for the laboratory request.
corrected	A	An Amended report is issued when the final report of diagnosis or test result(s) have been changed or amended. Amended report includes information with the latest submitted provisional report/final report/supplementary report.
appended	S	A supplementary report is issued when additional information is available when final/amended report has been submitted to eHR.
unknown	U	Laboratory report status cannot be provided.

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證件	Other travel documents issued by the People Republic of China government / authorising agent, exclude One-way Permit and Two-way Permit
OP	Travel document - overseas	其他國家/地區發出之旅遊證件	Travel documents issued by other countries / regions
OW	One-way Permit	單程証	One-way Permit
RE	Recognizance Form	擔保書(行街紙)	Recognizance Form
RP	Re-entry Permit	香港特別行政區回港證	HKSAR Re-entry Permit
TW	Two-way Permit	雙程証	Two-way Permit

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 UUID URI

Online UUID generator : <https://www.uuidgenerator.net/>

Python uuid module documentation: <https://docs.python.org/3/library/uuid.html>

Java UUID Class Documentation:

<https://docs.oracle.com/en/java/javase/14/docs/api/java.base/java/util/UUID.html>

FHIR Reference

Bundle Resource: <https://hl7.org/fhir/R4/bundle.html>

Composition Resource: <https://hl7.org/fhir/R4/composition.html>

Patient Resource: <https://hl7.org/fhir/R4/patient.html>

Organization Resource : <https://hl7.org/fhir/r4/organization.html>

PractitionerRole Resource: <https://hl7.org/fhir/R4/practitionerrole.html>

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

DiagnosticReport Resource : <https://hl7.org/fhir/R4/diagnosticreport.html>

Specimen Resource : <https://hl7.org/fhir/R4/specimen.html>

ServiceRequest Resource : <https://hl7.org/fhir/R4/servicerequest.html>

Observation Resource : <https://hl7.org/fhir/R4/observation.html>

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