



RIAYATI Program

Interface Control Document (HL7 C-CDA Inbound)

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Table 1: Document Distribution

Version and Distribution History			
Version #	Date	Brief Comments on Change	Author
1.1	12-May-2020	Draft Specification	MOHAP
2.0	24-Mar-2021	Updated as per Healthshare mapping	MOHAP
3.0	02-Apr-2021	Update field X-Path and tested sample in Riayati	MOHAP
3.1	18-Apr-2021	Updated the Author section	MOHAP
3.2	19-Apr-2021	Updated for the MRN and Assigning Authority	MOHAP
3.3	20-Apr-2021	Reviewed and addressed review comments	MOHAP
3.4	19-Sep-2021	Updated GCC ID with OID	MOHAP
4.0	19-Sep-2021	Reviewed and Approved changes and baselined Version	MOHAP
4.1	06-Jun-2022	Updated	MOHAP
4.2	17-Nov-2025	Added Encounter Specialty	MOHAP

Table 1: Version History

Document Acceptance and Sign-Off		
Name	Signature	Date
MOHAP		25-Dec-2025

Table 2: Document Acceptance and Sign-off



1 About this document

1.1 Purpose of this Document

The interfaces addressed in this document are designed to allow bi-directional communications using the health care industry's Health Level 7 (HL7) version Consolidated Clinical Document Architecture (C-CDA) standards for the exchange of electronic health data between information systems. The interfaces are designed to:

- Process transcriptions communicated electronically from a sending system (such as an electronic medical record or practice management system) into the Riayati HIE receiving system.

This document describes the interface, addresses the data structure and available communication options, and provides other coordination information for implementing the interface. To assist the parties involved in planning, installing, and using the interface, applicable message segments are included.

We will commonly refer to the above as "providers", i.e. those who are participating in Riayati HIE program.

This document refers the Health Level Seven (HL7) CDA® R2 IG: C-CDA Templates for Clinical Notes STU Release 2.1.

1.2 Audience

This document is intended for the Technical Team from the Provider Organizations from the Northern Emirates and EMR vendors.

1.3 Abbreviations and Terms

Abbreviation	Term
CDA	Clinical Document Architecture
C-CDA	Consolidated Clinical Document Architecture
CCD	Continuity of Care Document
HIE	Health Information Exchange
HTTP	Hyper Text Transport Protocol
IHE	Integrating Health Enterprise
MOHAP	Ministry of Health and Prevention
SOAP	Simple Object Access Protocol
UAE	United Arab Emirates

Table 3: Abbreviations and Terms



2 Introduction

2.1 RIAYATI Program

His Highness Sheikh Mohammed bin Rashid Al Maktoum announced in 2015 the initiative to establish a Health Information Exchange system – “RIAYATI” for patients in the Northern Emirates, UAE. In order to facilitate the movement of patients across healthcare providers, as well as connect public and private hospitals and clinics to share and exchange Health Records.

The RIAYATI Service will be the primary force driving an integrated, sustainable modern digital health platform that improves the safety of the patients, healthcare quality and population health in general through the safe sharing of medical data and information of all healthcare system beneficiaries across the Northern Emirates.

2.2 Health Information Exchange

RIAYATI Health Information Exchange will make quality healthcare data available for improvement of the patient care and support the futuristic innovative services like Clinical Decision Support, UAE specific clinical pathways, advanced analytics and Artificial Intelligence.

The RIAYATI HIE has various components as mentioned below to support the above-mentioned objectives.

- Enterprise Service Bus
- Registries
 - Patient Registry
 - Provider Registry
 - Organization Registry
 - Document Registry
 - Terminology Registry
- Repositories
 - Clinical Data
 - Documents

2.3 C-CDA

The Consolidated CDA (C-CDA) implementation guide contains a library of CDA templates, incorporating and harmonizing previous efforts from Health Level Seven (HL7), Integrating the Healthcare Enterprise (IHE), and Health Information Technology Standards Panel (HITSP). It represents harmonization of the HL7 Health Story guides, HITSP C32, related components of IHE Patient Care Coordination (IHE PCC), and Continuity of Care (CCD). C-CDA Release 1 included all required CDA templates in Final Rules for Stage 1 Meaningful Use and 45 CFR Part 170 – Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology; Final Rule. This R2.1 guide was developed and produced by the HL7 Structured Documents Workgroup. It updates the C-CDA R2 (2014) guide to support “on-the-wire” compatibility with R1.1 systems C-CDA Release 2.1 implementation guide, in conjunction with the HL7 CDA Release 2 (CDA R2) standard, is to be used for implementing the CDA documents and header constraints for clinical notes.



3 The C-CDA R2 – Clinical Documents

Riayati HIE will provide the inbound interfaces for the below mentioned C-CDA Templates which is based on CCDA R2.1 standard.

Document Template	Description
Continuity of Care Document (CCD)	The Continuity of Care Document (CCD) represents a core data set of the most relevant administrative, demographic, and clinical information facts about a patient's healthcare, covering one or more healthcare encounters. It provides a means for one healthcare practitioner, system, or setting to aggregate all of the pertinent data about a patient and forward it to another to support the continuity of care.
Care Plan	<p>A Care Plan (including Home Health Plan of Care (HHPoC)) is a consensus-driven dynamic plan that represents a patient's and Care Team Members' prioritized concerns, goals, and planned interventions.</p> <p>The CDA Care Plan represents an instance of this dynamic Care Plan at a point in time. The CDA document itself is NOT dynamic.</p>
Consultation Note	The Consultation Note is generated by a request from a clinician for an opinion or advice from another clinician.
Discharge Summary	The Discharge Summary is a document which synthesizes a patient's admission to a hospital, LTPAC provider, or other setting. It provides information for the continuation of care following discharge.
Progress Note	This template represents a patient's clinical status during a hospitalization, outpatient visit, treatment with a LTPAC provider, or other healthcare encounter.
Referral Note	A Referral Note communicates pertinent information from a provider who is requesting services of another provider of clinical or non-clinical services.
Unstructured Document	An Unstructured Document (UD) document type can include unstructured content, such as a graphic, directly in a text element with a media type attribute, or reference a single document file, such as a word-processing document using a text/reference element.

The data elements that are supported by the interface for each Document templates are described in the [Document Templates](#) section.

3.1 Basic Guidelines

3.1.1 Facility level

The CCD document should represent only one Patient record with MRN reference for the respective facility level. If the EMR instance supports multi-facility model, the CCD Document should be generated for individual MRN-Facility combinations.

3.1.2 Encounter Summary

As Riayati HIE will support CCD document as an Encounter Summary, there are custom Encounter references added under all the Visit based sections. The Sending should map the respective Encounters against the individual artefacts like Diagnoses, Problems, Procedures, Medications, Results and etc.,.

3.1.3 Clinician and Facility references

Wherever the Facility and Clinician references are used, the Assigning Authority OID should be passed with root attribute and the Clinician and Facility Licence numbers with the extension attributes.

3.1.4 Definitions

The below cardinality reference can be used for the Section and Attribute level mandatory conditions.

Term	Definition
R	Required
RA	Required if available
O	Optional

4 Document Templates

4.1 Continuity of Care Document (CCD) (V3)

XPath	Req	Description	Comments
/ClinicalDocument		Root	
/templateId/root	R	Template Id	Must be: 2.16.840.1.113883.10.20.22.1.2
/code/code	R	Document Code	Must be: 34133-9
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/recordTarget	R	Patient Demographics	Please refer. <u>Patient</u>
/author	R	Author of the Document	Please refer. <u>Author (Document Level)</u>
/informant	O	Informant	Please refer. <u>Informant (Document Level)</u>
/participant	O	Participants	Please refer. <u>Participants</u>
/component/structuredBody/	R	Structured Body	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.6.1']/	R	Allergies	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.22.1']/	R	Encounters	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.43']/	R	Admission Diagnosis	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.24']/	R	Discharge Diagnosis	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.5.1']/	R	Problems	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.7.1']/	R	Procedures	



XPath	Req	Description	Comments
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.1.1']/	R	Medications	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.11.1']/	R	Discharge Medications	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.2.1']/	R	Immunizations	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.3.1']/	R	Results	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.4.1']/	R	Vital Signs	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.15']/	R	Family History	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.17']/	R	Social History	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.14']/	R	Functional Status	
/component/section[templateId/@root='2.16.840.1.113883.10.20.22.2.9']/	O	Assessment and Plan	

4.2 Care Plan (V2)

Riayati CCDA R2.1 based interface will support only CCD Document in the initial Phase.

4.3 Consultation Note (V3)

Riayati CCDA R2.1 based interface will support only CCD Document in the initial Phase.

4.4 Discharge Summary (V3)

Riayati CCDA R2.1 based interface will support only CCD Document in the initial Phase.

4.5 Progress Note (V3)

Riayati CCDA R2.1 based interface will support only CCD Document in the initial Phase.

4.6 Referral Note (V2)

Riayati CCDA R2.1 based interface will support only CCD Document in the initial Phase.

4.7 Unstructured Document (V3)

Riayati CCDA R2.1 based interface will support only CCD Document in the initial Phase.



5 Document Header

5.1 Patient

Section Field	Req	Field Name	Comments
/ClinicalDocument/recordTarget/patientRole/	R	Patient Information	
id[@root="<Facility's OID>"]/@extension	R	Patient MRN	@root attribute must be the Facility's OID assigned by Riayati and @extension value must be the MRN (facility level) of the Patient.
id[@root="<Assigning Authority's OID>"]/@extension	RA	OMRN	Organisation level MRN. @root attribute must be the Assigning Authority's OID assigned by Riayati and @extension value must be the OMRN (Organisation level) of the Patient.
id[@root="2.16.840.1.113883.3.7326"]/@extension	RA	Emirates ID	@root attribute must be "2.16.840.1.113883.3.7326" (EID) and @extension attribute must be the Emirates id of the Patient.
id[@root="2.16.840.1.113883.4.330"]/@extension	RA	Passport Number	@root attribute must be "2.16.840.1.113883.4.330" (PPT) and @extension attribute must be the Passport number of the Patient.
id[@root="2.16.840.1.113883.3.8991.2"]/@extension	RA	GCC Id	@root attribute must be the "2.16.840.1.113883.3.8991.1000.1" (GCC) and @extension must be GCC ID.
/ClinicalDocument/recordTarget/patientRole/patient	R	Patient Demographics	
/name[@use='L']/given	R	Family Name	
/name[@use='L']/family	R	Given Name	



Section Field	Req	Field Name	Comments
/birthTime/@value	R	Birth DateTime	
/administrativeGenderCode/@code	R	Gender Code	Must have value either M, F or U
/administrativeGenderCode/@displayName	R	Gender Name	
/maritalStatusCode/@code	O	Marital Status Code	Must have valid HL7 table 0002 code value.
/maritalStatusCode/@displayName	O	Marital Status Name	
/religiousAffiliationCode/@code	O	Religion Code	Must have valid HL7 Table 0006 code value.
/religiousAffiliationCode/@displayName	O	Religion Name	
/raceCode/@code	RA	Race Code	Must have valid HL7 Table 0005 code value.
/raceCode/@displayName	RA	Race Name	
/ethnicGroupCode/@code	O	Ethnic Group Code	
/ethnicGroupCode/@displayName	O	Ethnic Group Name	
/languageCommunication/languageCode/@code	O	Primary Language	Must be valid ISO 639-1 alpha-2 code.
/ClinicalDocument/recordTarget/patientRole/addr	R	Patient Address	
/streetAddressLine	R	Street	
/city	R	City	
/state	R	State	
/postalCode	R	Zip	
/country	R	Country	
/ClinicalDocument/recordTarget/telecom	R	Telecom Information	
/@value	R	Phone Number	

5.2 Author (Document Level)

Section Field	Req	Field Name	Comments
/ClinicalDocument/author/assignedAuthor/	R	Author	Where assignedAuthor/assignedAuthoringDevice is not available
/code/@displayName	R	Entered by Code	
/code/@displayName	R	Entered by Description	
/ClinicalDocument/author/ assignedAuthor/ representedOrganization	R	Entered At	Where assignedAuthor/assignedAuthoringDevice is not available. This will be used when document-level informant is not available.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.
/addr/streetAddressLine	O	Address Street	
/addr/city	O	Address City	
/addr/state	O	Address State	
/addr/country	O	Address Country	
/addr/postalCode	O	Address Zip Code	
/telecom[@use='HP' or @use='HV' or not(@use)]	O	Home Phone Number	
/telecom[@use='MC']	O	Mobile Number	
/telecom[@use='WP']	O	Work Phone Number	
/telecom[contains(@value,'mailto:')]	O	Email Address	

5.3 Informant (Document Level)

Only Assigned Healthcare Provider Informant with Associated Organisation reference will be considered.

Section Field	Req	Field Name	Comments
/ClinicalDocument/informant/assignedEntity/ representedOrganization	R	Entered At	If document-level informant is present and if document-level author is present then document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.
/addr/streetAddressLine	O	Address Street	
/addr/city	O	Address City	
/addr/state	O	Address State	
/addr/country	O	Address Country	
/addr/postalCode	O	Address Zip Code	
/telecom[@use='HP' or @use='HV' or not(@use)]	O	Home Phone Number	
/telecom[@use='MC']	O	Mobile Number	
/telecom[@use='WP']	O	Work Phone Number	
/telecom[contains(@value,'mailto:')]	O	Email Address	

5.4 Participants

Only the Individual type of Participants will be processed by Riayati for Emergency Contact and NOK contact types.

Section Field	Req	Field Name	Comments
/ClinicalDocument/participant[@typeCode='IND']/associatedEntity/	O	Support Contact	More than one Contact is supported.
/@classCode	R	Contact Type	Must have value either 'ECON' or 'NOK'. 'ECON' - Emergency Contact 'NOK' - Next of Kin Will be mapped to "Unknown" if it is not available or is not resolved.
/code/@code	R	Relationship Code	
/code/@displayName	R	Relationship Description	
/code/@codeSystem	R	Relationship Code System	
/associatedPerson/name/given	R	Family Name	
/associatedPerson/name/family	R	Given Name	
/addr/streetAddressLine	R	Street	
/addr/city	R	City	
/addr/state	R	State	
/addr/postalCode	R	Zip	
/addr/country	R	Country	
/telecom[@use='HP' or @use='HV' or not(@use)]	O	Home Phone Number	
/telecom[@use='MC']	RA	Mobile Number	Mobile Number or Work phone required.
/telecom[@use='WP']	RA	Work Phone Number	Mobile Number or Work phone required.
/telecom[contains(@value,'mailto:')]	O	Email Address	

6 Sections

The sections mentioned here will be read from “/ClinicalDocument/component/structuredBody/component/section”.

6.1 Allergies and Intolerances

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	For all the templates with Allergies and Intolerances Section - entries optional (2.16.840.1.113883.10.20.22.2.6) map the Template Id of Allergies and Intolerances Section - entries required (2.16.840.1.113883.10.20.22.2.6.1) as well.
/code/code	R	Section Code	Must be: 48765-2
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/act/	R	Allergy Entry	
/author/time/@value	R	Allergy Entered On	
/author/assignedAuthor	R	Allergy Entered By	Department where Allergy was entered.
/code/@code	R	Code	
/code/@displayName	R	Description	
/performer/	O	Allergy Clinician	
/assignedEntity/id/@extension	RA	Identifier	License Number of the Clinician.
/assignedEntity/id/@root	RA	Assigning Authority	Assigning Authority of the License. MOHAP: 2.16.840.1.113883.3.8991 DHA: 2.16.840.1.113883.3.9029 HAAD (DOH): 2.16.840.1.113883.3.3079



Section Field	Req	Field Name	Comments
/assignedEntity/assignedPerson/name/family	O	Family Name	Clinician Name
/assignedEntity/assignedPerson/name/given	O	Given Name	Clinician Name
/entryRelationship/observation	R	Allergy Intolerance	
/templateId/@root	R	Template ID for Allergy - Intolerance	Must be: 2.16.840.1.113883.10.20.22.4.7
/effectiveTime/high/@value	O	To Time	
/effectiveTime/low/@value	O	From Time	
/entryRelationship/observation /value/	R	Allergy Category	
@code	R	Code	Must be valid SNOMED CT code
/value/@codeSystem	O	Code System	Must be: 2.16.840.1.113883.6.96 (SNOMED CT) OR blank.
/value/@displayName	R	Description	Description of the Allergy Category Allergy Type values like Food Allergy, Drug Allergy, Pollen Allergy, Environmental Allergy, Animal Allergy, Plant Allergy etc.,.
/value/@originalText	O	Original Text	Original Allergy Category description from the Source System.
/entry/act/entryRelationship/observation/participant/participantRole/playingEntity/	R	Allergen	Must be DOH code for Drug Allergy and SNOMED CT code for other type of Allergy.
/code/@code	R	Code	Must be DOH Drug Code for Drugs and rest SNOMED CT code.
/code/@codeSystemName	R	Code System	DOHDRUG Or SNOMED CT
/code/@displayName	RA	Description	



Section Field	Req	Field Name	Comments
/entry/act/entryRelationship/observation/entryRelationship[@typeCode='REFR']/observation[code/@code='33999-4']	R	Allergy Status	
value/@code	R	Status	If the Value Code is 55561003 then the status will be set as "Active" otherwise status will be set as "Inactive".
/entry/act/entryRelationship/observation/entryRelationship[@typeCode='MFST']/observation/	R	Allergy Reaction	
/templateId/@root	R	Template ID for Allergy Reaction	Must be: 2.16.840.1.113883.10.20.22.4.9
/value/@code	RA	Code	Reaction Code (if available).
/value/@codeSystem	RA	Code System	Coding System of the Reaction Code (if available).
/value/@displayName	R	Description	
/entry/act/entryRelationship/observation/entryRelationship[@typeCode='MFST']/ observation/entryRelationship[@typeCode='SUBJ']/observation[code/@code='SEV']	R	Allergy Severity	
/templateId/@root	R	Template ID for Allergy Severity	Must be: 2.16.840.1.113883.10.20.22.4.8
/value/@code	RA	Code	Must be one of the below values: 255604002 (Mild) OR 6736007 (Moderate) OR 24484000 (Severe)
/value/@codeSystem	RA	Code System	Must be: 2.16.840.1.113883.6.96 (SNOMED CT)
/value/@displayName	RA	Description	Mild (OR) Moderate (OR) Severe
/value/originalText	O	Original Text	The severity value from the Source System.



Section Field	Req	Field Name	Comments
/entry/act/informant/representedOrganization/	O	Allergy Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.
/entry/act/entryRelationship/act[code/@code='48767-8']/	O	Allergy Comments	
text	O	Comments	

6.2 Encounter

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	For all the templates with Encounters Section - entries optional (2.16.840.1.113883.10.20.22.2.22) map the Template Id of Encounters Section - entries required (2.16.840.1.113883.10.20.22.2.22.1) as well.
/code/code	R	Section Code	Must be: 46240-8
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/encounter/	R	Encounter Information.	
id/@extension	R	Encounter Number	
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
code/@code	R	Encounter Type	Must have value either 'AMB', 'IMP' or 'EMER' 'AMB' - Outpatient 'IMP' - InPatient 'EMER' - Emergency
/code/@displayName	R	Encounter Type Name	
/effectiveTime/low/@value	R	Start Time	Encounter Start DateTime
/effectiveTime/high/@value	O	End Time	Encounter End DateTime
/entry/encounter/performer[@typeCode 'PRF']/assignedEntity/	R	Provider Information.	Must have Attending Doctor information for Outpatient and Emergency.



Section Field	Req	Field Name	Comments
			Admitting Doctor information for Inpatient.
/id/@extension	RA	Identifier	License Number of the Clinician.
/id/@root	RA	Assigning Authority	Assigning Authority of the License. MOHAP: 2.16.840.1.113883.3.8991 DHA: 2.16.840.1.113883.3.9029 HAAD (DOH): 2.16.840.1.113883.3.3079
/assignedPerson/name/family	O	Family Name	Clinician Name
/assignedPerson/name/given	O	Given Name	Clinician Name
/telecom/@value	O	Clinician Phone Number	Mobile Number or Work phone required.
/entry/encounter/participant[typeCode="LOC"]/ participantRole[classCode="SDLOC"]/	R	Facility Information	
/id/@extension	R	Facility Code	This must be valid License Number of the Facility.
/id/@root	R	Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	R	Facility Name	
/code/@code	R	Facility Type	Must have value. '1117-1' or '1160-1' for Clinic '1108-0' - ER '1010-8' - Other
/code/@codesystem	R	Facility Type CodeSystem	Must be '2.16.840.1.113883.6.259'
/code/@displayName	R	Encounter Specialty	Specialty Name

6.2.1 Encounter Diagnosis

This will contain the Encounter Diagnosis (Primary Diagnosis) values. This should be grouped under the respective Encounter section.

Section Field	Req	Field Name	Comments
/entry/encounter/entryRelationship/act/	R	Encounter Diagnosis	
/templateId/@root	R	Activity Template Id	Must be: 2.16.840.1.113883.10.20.22.4.80
/code/@code	R	Activity Code	Must be: 29308-4
/code/@codeSystem	R	Activity Code System	Must be: 2.16.840.1.113883.6.1
/entry/encounter/entryRelationship/act/entryRelationship/observation	R	Problem Observation	
/templateId/@root	R	Problem Template Id	Must be: 2.16.840.1.113883.10.20.22.4.4
/code/@code	R	Problem Category Code	Must be: 282291009 (Diagnosis)
/code/@displayName	O	Problem Category Name	Must be: Diagnosis
/code/@codeSystem	O	Problem Category Coding System	Must be 2.16.840.1.113883.6.96
/code/@codeSystemName	O	Problem Category Coding System Name	Must be SNOMED CT
/value/@code	R	Problem Code	Should be an ICD 10 Code
/value/@displayName	R	Problem Description	Name of the problem as per ICD 10 text.
/effectiveTime/low/@value	R	Problem Onset Date	Start Date on which problem, this should not be problem entered date.
/effectiveTime/high/@value	O	Problem End Date	
/text	O	Problem Details	This is free text field for Problem description, can reference HTML using reference child node.



Section Field	Req	Field Name	Comments
/entry/encounter/entryRelationship/act/entryRelationship/observation/entryRelationship/observation[code/@code='33999-4']/value/@code	R	Problem Status	
	R	Problem Status Code	Must be SNOMED CT code with below values. Code Description 55561003 - Active 73425007 - Inactive 90734009 - Chronic 7087005 - Intermittent 255227004 - Recurrent 415684004 - Rule out 410516002 - Ruled out 413322009 - Resolved
value/@displayName	R	Problem Status	Must be name given for code in field above.

6.3 Admission Diagnosis

This section must carry the Secondary Diagnosis values. Primary Diagnosis to be mapped with the respective Encounters as Encounter Diagnosis.

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	Must be: 2.16.840.1.113883.10.20.22.2.43
/code/code	R	Section Code	Must be: 46241-6
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/act/	R	Hospital Admission Diagnosis	
/templateId/@root	R	Activity Template Id	Must be: 2.16.840.1.113883.10.20.22.4.34
/code/@code	R	Activity Code	Must be: 46241-6
/code/@codeSystem	R	Activity Code System	Must be: 2.16.840.1.113883.6.1
/entry/act/entryRelationship/observation	R	Problem Observation	
/templateId/@root	R	Problem Template Id	Must be: 2.16.840.1.113883.10.20.22.4.4
/code/@code	R	Problem Category Code	Must be: 282291009 (Diagnosis)
/code/@displayName	O	Problem Category Name	Must be: Diagnosis
/code/@codeSystem	O	Problem Category Coding System	Must be 2.16.840.1.113883.6.96
/code/@codeSystemName	O	Problem Category Coding System Name	Must be SNOMED CT
/value/@code	R	Problem Code	Should be an ICD 10 Code
/value/@displayName	R	Problem Description	Name of the problem as per ICD 10 text.
/effectiveTime/low/@value	R	Problem Onset Date	Start Date on which problem, this should not be problem entered date.
/effectiveTime/high/@value	O	Problem End Date	
/text	O	Problem Details	This is free text field for Problem description, can reference HTML using reference child node.
/entry/act/entryRelationship/observation/author/	O	Entered By	Department where Problem was recorded.



Section Field	Req	Field Name	Comments
assignedAuthor/code/@displayName	R	Code	If CDA @displayName is not available, then assignedPerson/name is considered.
assignedAuthor/code/@displayName	R	Description	If CDA @displayName is not available, then assignedPerson/name is considered.
/entry/act/entryRelationship/observation/performer	O	Problem Clinician	
/assignedEntity/id/@extension	RA	Identifier	License Number of the Clinician.
/assignedEntity/id/@root	RA	Assigning Authority	Assigning Authority of the License. MOHAP: 2.16.840.1.113883.3.8991 DHA: 2.16.840.1.113883.3.9029 HAAD (DOH): 2.16.840.1.113883.3.3079
/assignedEntity/assignedPerson/name/family	O	Family Name	Clinician Name
/assignedEntity/assignedPerson/name/given	O	Given Name	Clinician Name
/entry/act/entryRelationship/observation/entryRelationship/observation[code/@code='33999-4']/value/@code	R	Problem Status	
	R	Problem Status Code	Must be SNOMED CT code with below values. Code Description 55561003 - Active 73425007 - Inactive 90734009 - Chronic 7087005 - Intermittent 255227004 - Recurrent 415684004 - Rule out 410516002 - Ruled out 413322009 - Resolved



Section Field	Req	Field Name	Comments
value/@displayName	R	Problem Status	Must be name given for code in field above.
/entry/act/entryRelationship/observation/informant/representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.
/entry/act/entryRelationship[@typeCode='SUBJ']/encounter	R	Problem Encounter	
/id /@extension	R	Encounter Number	Encounter Id from EMR system.
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.

6.4 Discharge Diagnosis

This section must carry the diagnoses present at the time of discharge which occurred during the hospitalization. Problems that need ongoing tracking should also be included in the Problem Section.

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	Must be: 2.16.840.1.113883.10.20.22.2.24
/code/code	R	Section Code	Must be: 11535-2
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/act/	R	Hospital Discharge Diagnosis	
/templateId/@root	R	Activity Template Id	Must be: 2.16.840.1.113883.10.20.22.4.33
/code/@code	R	Activity Code	Must be: 11535-2
/code/@codeSystem	R	Activity Code System	Must be: 2.16.840.1.113883.6.1
/entry/act/entryRelationship/observation	R	Problem Observation	
/templateId/@root	R	Problem Template Id	Must be: 2.16.840.1.113883.10.20.22.4.4
/code/@code	R	Problem Category Code	Must be: 282291009 (Diagnosis)
/code/@displayName	O	Problem Category Name	Must be: Diagnosis
/code/@codeSystem	O	Problem Category Coding System	Must be 2.16.840.1.113883.6.96
/code/@codeSystemName	O	Problem Category Coding System Name	Must be SNOMED CT
/value/@code	R	Problem Code	Should be an ICD 10 Code
/value/@displayName	R	Problem Description	Name of the problem as per ICD 10 text.
/effectiveTime/low/@value	R	Problem Onset Date	Start Date on which problem, this should not be problem entered date.
/effectiveTime/high/@value	O	Problem End Date	
/text	O	Problem Details	This is free text field for Problem description, can reference HTML using reference child node.



Section Field	Req	Field Name	Comments
/entry/act/entryRelationship/observation/author/	O	Entered By	Department where Problem was recorded.
assignedAuthor/code/@displayName	R	Code	If CDA @displayName is not available, then assignedPerson/name is considered.
assignedAuthor/code/@displayName	R	Description	If CDA @displayName is not available, then assignedPerson/name is considered.
/entry/act/entryRelationship/observation/performer	O	Problem Clinician	
/assignedEntity/id/@extension	RA	Identifier	License Number of the Clinician.
/assignedEntity/id/@root	RA	Assigning Authority	Assigning Authority of the License. MOHAP: 2.16.840.1.113883.3.8991 DHA: 2.16.840.1.113883.3.9029 HAAD (DOH): 2.16.840.1.113883.3.3079
/assignedEntity/assignedPerson/name/family	O	Family Name	Clinician Name
/assignedEntity/assignedPerson/name/given	O	Given Name	Clinician Name
/entry/act/entryRelationship/observation/entryRelationship/observation[code/@code='33999-4']/value/@code	R	Problem Status	
	R	Problem Status Code	Must be SNOMED CT code with below values. Code Description 55561003 - Active 73425007 - Inactive 90734009 - Chronic 7087005 - Intermittent 255227004 - Recurrent 415684004 - Rule out 410516002 - Ruled out



Section Field	Req	Field Name	Comments
			413322009 - Resolved
value/@displayName	R	Problem Status	Must be name given for code in field above.
/entry/act/entryRelationship/observation/informant/representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.
/entry/act/entryRelationship[@typeCode='SUBJ']/encounter	R	Problem Encounter	
/id/@extension	R	Encounter Number	Encounter Id from EMR system.
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.

6.5 Problems

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	For all the templates with Problem Section - entries optional (2.16.840.1.113883.10.20.22.2.5) map the Template Id of Problem Section - entries required (2.16.840.1.113883.10.20.22.2.5.1) as well.
/code/code	R	Section Code	Must be: 11450-4
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/act/	R	Problem Concern Act	
/templateId/@root	R	Activity Template Id	Must be: 2.16.840.1.113883.10.20.22.4.3
/code/@code	R	Activity Code	Must be: CONC
/code/@codeSystem	R	Activity Code System	Must be: 2.16.840.1.113883.5.6
/entry/act/author/	O	Entered By	Department where Problem was recorded.
assignedAuthor/code/@displayName	R	Code	If CDA @displayName is not available, then assignedPerson/name is considered.
assignedAuthor/code/@displayName	R	Description	If CDA @displayName is not available, then assignedPerson/name is considered.
/entry/act/performer	O	Problem Clinician	
/assignedEntity/id/@extension	RA	Identifier	License Number of the Clinician.
/assignedEntity/id/@root	RA	Assigning Authority	Assigning Authority of the License. MOHAP: 2.16.840.1.113883.3.8991 DHA: 2.16.840.1.113883.3.9029 HAAD (DOH): 2.16.840.1.113883.3.3079
/assignedEntity/assignedPerson/name/family	O	Family Name	Clinician Name
/assignedEntity/assignedPerson/name/given	O	Given Name	Clinician Name



Section Field	Req	Field Name	Comments
/entry/act/entryRelationship/observation	R	Problem Observation	
/templateId/@root	R	Problem Template Id	Must be: 2.16.840.1.113883.10.20.22.4.4
/code/@code	R	Problem Category Code	Must be one of the below SNOMED CT Code. 404684003 - Finding 409586006 - Complaint 64572001 - Condition 418799008 - Symptom 55607006 - Problem
/code/@displayName	O	Problem Category Name	Must be the description of the Code.
/code/@codeSystem	O	Problem Category Coding System	Must be 2.16.840.1.113883.6.96
/code/@codeSystemName	O	Problem Category Coding System Name	Must be SNOMED CT
/value/@code	R	Problem Code	Should be an ICD 10 Code
/value/@displayName	R	Problem Description	Name of the problem as per ICD 10 text.
/effectiveTime/low/@value	R	Problem Onset Date	Start Date on which problem, this should not be problem entered date.
/effectiveTime/high/@value	O	Problem End Date	
/text	O	Problem Details	This is free text field for Problem description, can reference HTML using reference child node.
/entry/act/entryRelationship/observation/entryRelationship/observation[code/@code='33999-4']	R	Problem Status	
value/@code	R	Problem Status Code	Must be SNOMED CT code with below values. Code Description 55561003 - Active 73425007 - Inactive



Section Field	Req	Field Name	Comments
			90734009 - Chronic 7087005 - Intermittent 255227004 - Recurrent 415684004 - Rule out 410516002 - Ruled out 413322009 - Resolved
value/@displayName	R	Problem Status	Must be name given for code in field above.
/entry/act/entryRelationship/observation/informant/representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.
/entry/act/entryRelationship[@typeCode='SUBJ']/encounter	R	Problem Encounter	
/id/@extension	R	Encounter Number	Encounter Id from EMR system.
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.

6.6 Procedures

This section must carry all interventional, surgical, diagnostic, or therapeutic procedures or treatments pertinent to the patient historically at the time the document is generated. The section should include notable procedures but can contain all procedures for the period of time being summarized.

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	For all the templates with Procedures Section - entries optional (2.16.840.1.113883.10.20.22.2.7) map the Template Id of Procedures Section - entries required (2.16.840.1.113883.10.20.22.2.7.1) as well.
/code/code	R	Section Code	Must be: 47519-4
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/procedure/	R	Procedure Information	
/templateId/@root	R	Activity Template Id	Must be: 2.16.840.1.113883.10.20.22.4.14
Id/@extension	O	Procedure Id	Unique procedure identifier which is used as Primary key in EMR database to record procedure order instance.
/code/@code	R	Procedure Code	Must be CPT4 Code or CDT Code (For Dental Procedures)
/code/@codeSystem	R	Activity Code System	Must be one of the below: 2.16.840.1.113883.6.12 (CPT) or 2.16.840.1.113883.6.13 (CDT)
/code/@displayName	O	Procedure Description	
/code/originalText/reference/@value	O	Procedure Original Text	Original Text from the EMR system



Section Field	Req	Field Name	Comments
effectiveTime/@value	R	Procedure DateTime	
/entry/procedure/entryRelationship[@typeCode="SUBJ"]/encounter/	R	Encounter Information	
id/@extension	R	Problem Encounter	
id/@root	R	Problem Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE.
/entry/procedure/author/	O	Entered By	Department where Procedure was recorded.
assignedAuthor/code/@displayName	R	Code	If CDA @displayName is not available, then assignedPerson/name is considered.
assignedAuthor/code/@displayName	R	Description	If CDA @displayName is not available, then assignedPerson/name is considered.
/entry/procedure/informant/representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.
/entry/act/performer	O	Procedure Clinician	
/assignedEntity/id/@extension	RA	Identifier	License Number of the Clinician.
/assignedEntity/id/@root	RA	Assigning Authority	Assigning Authority of the License. MOHAP: 2.16.840.1.113883.3.8991 DHA: 2.16.840.1.113883.3.9029



Section Field	Req	Field Name	Comments
			HAAD (DOH): 2.16.840.1.113883.3.3079
/assignedEntity/assignedPerson/name/family	O	Family Name	Clinician Name
/assignedEntity/assignedPerson/name/given	O	Given Name	Clinician Name



6.7 Medications

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	For all the templates with Medications Section - entries optional (2.16.840.1.113883.10.20.22.2.1) map the Template Id of Medications Section - entries required (2.16.840.1.113883.10.20.22.2.1.1) as well.
/code/code	R	Section Code	Must be: 10160-0
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/substanceAdministration	R	Medication Observation	
/templateId/@root	R		Must be: 2.16.840.1.113883.10.20.22.4.16
/id[@assigningAuthorityName = "-PlacerId"]/@extension	O	Placer Id	If a CDA id with @assigningAuthorityName containing '-PlacerId' is found then that id is used for import to Placer Id, regardless of position.
/id[@assigningAuthorityName = "--FillerId"]/@extension	O	Filler Id	If a CDA id with @assigningAuthorityName containing '-FillerId' is found then that id is used for import to Filler Id, regardless of position.
/effectiveTime[@xsi:type='IVL_TS']/low/@value	R	From Time	
/effectiveTime[@xsi:type='IVL_TS']/high/@value	O	To Time	
/effectiveTime[@xsi:type='IVL_TS']/low/@value	R	Duration	
/effectiveTime[@xsi:type='IVL_TS']/high/@value	O	Duration	
/effectiveTime[@xsi:type='PIVL_TS']	O	Frequency	In CDA, hl7:period/@value + hl7:period/@unit always indicates an interval. @institutionSpecified indicates whether the original data was a frequency (true) or an interval (false).
/routeCode/@code	O	Route Code	



Section Field	Req	Field Name	Comments
/routeCode/@codeSystem	O	Route Code System	
/routeCode/@displayName	R	Route Description	Route Description
/doseQuantity/@value	R	Dose Quantity	Ordered Quantity
/doseQuantity/@unit	O	Dose UoM	
/rateQuantity/@value	O	Rate Amount	Rate (e.g., the 100 in 100 ml/hour)
/rateQuantity/@unit	O	Rate Units	Units for Rate (e.g., the ml in 100 ml/hour)
/consumable/manufacturedProduct/manufacturedMaterial	R	Medication Order Item	
/code/@code	R	Code	DOH Drug Code
/code/@codeSystemName	R	Code System	DOHDRUG
/code/@displayName	R	Description	Drug Name
/originalText	O	Original Text	Original Drug details from EMR.
/entry/substanceAdministration/entryRelationship[typeCode="SUBJ" and inversionInd="true"]/encounter	R	Encounter	
/id/@extension	R	Encounter Number	Encounter Id from EMR system.
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/entry/substanceAdministration/author/	O	Entered By	Department where Medication was ordered.
assignedAuthor /code/@displayName	R	Code	If CDA @displayName is not available, then assignedPerson/name is considered.
assignedAuthor /code/@displayName	R	Description	If CDA @displayName is not available, then assignedPerson/name is considered.
time/@value	O	Entered On	



Section Field	Req	Field Name	Comments
/entry/substanceAdministration/	O	Medication Order Additional Information	
/entryRelationship[@typeCode='RSON']/observation/value	O	Indication	The Indication is a String property. However, in C-CDA it is a coded element. Indication will be considered from the below order: - value/@displayName - value/originalText - value/@code - value/translation/@displayname - value/translation/@code
/entryRelationship[@typeCode="REFR"]/supply[@moodCode='EVN']/id	O	Prescription Number	If CDA id/@extension is present, then it is imported to Prescription Number. Otherwise if id/@root is present then import that value to Prescription Number.
/entryRelationship/supply[@moodCode='INT']/author	R	Ordered By	Clinician License Number
/entryRelationship[@typeCode='REFR']/supply/@moodCode OR /entryRelationship[@typeCode='REFR']/observation/value/@code	O	Status	If CDA supply moodCode='EVN' then Status='E' (Executed). If CDA status entryRelationship.observation.value.code='421139008' then Status='H' (On-Hold). If CDA status entryRelationship.observation.value.code='55561003' then Status='IP' (In-progress). Otherwise Status='I' (Inactive).
/text	O	Text Instruction	
/entryRelationship/act[code/@code='48767-8']/text	O	Comments	
/entry/substanceAdministration/informant/representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE.



Section Field	Req	Field Name	Comments
/name	O	Description	Must be name given for code in field above.

6.8 Discharge Medications

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	For all the templates with Discharge Medications Section - entries optional (2.16.840.1.113883.10.20.22.2.11) map the Template Id of Discharge Medications Section - entries required (2.16.840.1.113883.10.20.22.2.11.1) as well.
/code/code	R	Section Code	Must be: 10183-2
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/act/templateId/@root	R		Must be: 2.16.840.1.113883.10.20.22.4.35
/entry/act/code	R		Must be: 10183-2
/entry/act/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/entry/act/code/codeSystemName	R	Section Code System Name	Must be: LN
/entry/act/entryRelationship/substanceAdministration	R	Medication Observation	
/templateId/@root	R		Must be: 2.16.840.1.113883.10.20.22.4.16
/id[@assigningAuthorityName = "XXXXX-PlacerId"]/@extension	O	Placer Id	If a CDA id with @assigningAuthorityName containing '-PlacerId' is found then that id is used for import to Placer Id, regardless of position.
/id[@assigningAuthorityName = "-FillerId"]/@extension	O	Filler Id	If a CDA id with @assigningAuthorityName containing '-FillerId' is found then that id is used for import to Filler Id, regardless of position.



Section Field	Req	Field Name	Comments
/effectiveTime[@xsi:type='IVL_TS']/low/@value	R	From Time	
/effectiveTime[@xsi:type='IVL_TS']/high/@value	O	To Time	
/effectiveTime[@xsi:type='IVL_TS']/low/@value	R	Duration	
/effectiveTime[@xsi:type='IVL_TS']/high/@value	O	Duration	
/effectiveTime[@xsi:type='PIVL_TS']	O	Frequency	In CDA, hl7:period/@value + hl7:period/@unit always indicates an interval. @institutionSpecified indicates whether the original data was a frequency (true) or an interval (false). Even though the property name is Frequency, it may be used to import an interval.
/routeCode/@code	O	Route Code	
/routeCode/@codeSystem	O	Route Code System	
/routeCode/@displayName	R	Route Description	Route Description
/doseQuantity/@value	R	Dose Quantity	Ordered Quantity
/doseQuantity/@unit	O	Dose UoM	
/rateQuantity/@value	O	Rate Amount	Rate (e.g., the 100 in 100 ml/hour)
/rateQuantity/@unit	O	Rate Units	Units for Rate (e.g., the ml in 100 ml/hour)
/consumable/manufacturedProduct/ manufacturedMaterial	R	Medication Order Item	
/code/@code	R	Code	DOH Drug Code
/code/@codeSystemName	R	Code System	DOHDRUG
/code/@displayName	R	Description	Drug Name
/originalText	O	Original Text	Original Drug details from EMR.
/entry/act/entryRelationship/substanceAdministration/	R	Encounter	



Section Field	Req	Field Name	Comments
entryRelationship[typeCode="SUBJ" and inversionInd="true"]/encounter			
/id/@extension	R	Encounter Number	Encounter Id from EMR system.
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/entry/act/entryRelationship/substanceAdministration/author/	O	Entered by and Entered On	
/assignedAuthor/code/@displayName	R	Entered by Code	If CDA @displayName is not available, then assignedPerson/name is considered.
/assignedAuthor /code/@displayName	R	Entered by Description	If CDA @displayName is not available, then assignedPerson/name is considered.
/author/time/@value	O	Entered On	
/entry/act/entryRelationship/substanceAdministration/	O	Medication Order Additional Information	
/entryRelationship[@typeCode='RSON']/observation/value	O	Indication	The Indication is a String property. However, in C-CDA it is a coded element. Indication will be considered from the below order: - value/@displayName - value/originalText - value/@code - value/translation/@displayname - value/translation/@code
/entryRelationship/supply[@moodCode='EVN']/id	O	Prescription Number	If CDA id/@extension is present, then it is imported to Prescription Number. Otherwise if id/@root is present then import that value to Prescription Number.



Section Field	Req	Field Name	Comments
/entryRelationship/supply[@moodCode='INT']/author	R	Ordered By	Clinician License Number
/entryRelationship[@typeCode='REFR']/supply/@moodCode OR /entryRelationship[@typeCode='REFR']/observation/value/@code	O	Status	If CDA supply moodCode='EVN' then Status='E' (Executed). If CDA status entryRelationship.observation.value.code='421139008' then Status='H' (On-Hold). If CDA status entryRelationship.observation.value.code='55561003' then Status='IP' (In-progress). Otherwise Status='I' (Inactive).
/text	O	Text Instruction	
/entryRelationship/act[code/@code='48767-8']/text	O	Comments	
/entry/act/entryRelationship/substanceAdministration/ informant/representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE.
/name	O	Description	Must be name given for code in field above.

6.9 Immunizations

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	For all the templates with Immunizations Section - entries optional (2.16.840.1.113883.10.20.22.2.2) map the Template Id of Immunizations Section - entries required (2.16.840.1.113883.10.20.22.2.2.1) as well.
/code/code	R	Section Code	Must be: 11369-6
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/substanceAdministration/	R	Vaccination Information	
/templateId/@root	R		Must be: 2.16.840.1.113883.10.20.22.4.52
/id[@assigningAuthorityName = "-PlacerId"]/@extension	O	Placer Id	If a CDA id with @assigningAuthorityName containing '-PlacerId' is found then that id is used for import to PlacerId, regardless of position.
/id[@assigningAuthorityName = "-FillerId"]/@extension	R	Filler Id	If a CDA id with @assigningAuthorityName containing '-FillerId' is found then that id is used for import to FillerId, regardless of position.
/effectiveTime[@xsi:type='IVL_TS']/low/@value	R	From Time	
/effectiveTime[@xsi:type='IVL_TS']/high/@value	O	To Time	
/effectiveTime[@xsi:type='IVL_TS']/low/@value	R	Duration	
/effectiveTime[@xsi:type='IVL_TS']/high/@value	O	Duration	
/routeCode/@code	O	Route Code	
/routeCode/@codeSystem	O	Route Code System	
/routeCode/@displayName	R	Route Description	Route Description



Section Field	Req	Field Name	Comments
/doseQuantity/@value	O	Dose Quantity	Ordered Quantity
/doseQuantity/@unit	O	Dose UoM	
/rateQuantity/@value	O	Rate Amount	Rate (e.g., the 100 in 100 ml/hour)
/rateQuantity/@unit	O	Rate Units	Units for Rate (e.g., the ml in 100 ml/hour)
/consumable/manufacturedProduct/ manufacturedMaterial/	R	Order Item	
/code/@code	R	Code	Must be CVX code.
/code/@codeSystem	R	Code System	Must be CVX
/code/@displayName	R	Description	
/lotNumberText	R	Lot Number	
/entry/substanceAdministration/ entryRelationship[@typeCode='SUBJ']/encounter	R	Encounter	
/id/@extension	R	Encounter Number	Encounter Id from EMR system.
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/entry/substanceAdministration/author/ assignedAuthor	O	Entered By	
/code/@displayName	R	Code	If CDA @displayName is not available, then assignedPerson/name is considered.
/code/@displayName	R	Description	If CDA @displayName is not available, then assignedPerson/name is considered.



Section Field	Req	Field Name	Comments
/entry/substanceAdministration/entryRelationship[@typeCode='RSON']/observation[@moodCode='EVN' and hl7:templateId/@root='2.16.840.1.113883.10.20.22.4.53']	O	Refusal Reason	
/code/@code	R	Reason Code	
/code/@displayName	R	Reason Description	
/entry/substanceAdministration/	O	Vaccination Order Additional information	
/entryRelationship[@typeCode='RSON']/observation/value	O	Indication	The Indication is a String property. However, in C-CDA it is a coded element. Indication will be considered from the below order: - value/@displayName - value/originalText - value/@code - value/translation/@displayname - value/translation/@code
/entryRelationship/supply[@moodCode='INT']/author	O	Ordered By	License Number of the Order by Clinician.
/entryRelationship[@typeCode='REFR']/supply/@moodCode OR /entryRelationship[@typeCode='REFR']/observation/value/@code	O	Status	If CDA supply moodCode='EVN' then Status='E' (Executed). If CDA status entryRelationship.observation.value.code='421139008' then Status='H' (On-Hold). If CDA status entryRelationship.observation.value.code='55561003' then Status='IP' (In-progress). Otherwise Status='I' (Inactive).
/text	O	Text Instruction	
/entryRelationship/act[code/@code='48767-8']/text	O	Comments	



Section Field	Req	Field Name	Comments
/entry/substanceAdministration/informant/ representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE.
/name	O	Description	Must be name given for code in field above.

6.10 Results

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	Must be: 2.16.840.1.113883.10.20.22.2.3.1
/code/code	R	Section Code	Must be: 30954-2
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/organizer/	R	Results Organizer	
/templateId/root	R	Template ID for Organizer	Must be: 2.16.840.1.113883.10.20.22.4.1
/id[@assigningAuthorityName = "XXXXX-PlacerId"]/@extension	O	Result Order Placer Id	Unique Order Id as created by EMR system.
/id[@assigningAuthorityName = "XXXXX-FillerId"]/@extension	R	Result Order Filler Id	Unique Result Id as created by Filler system.
/code/@code	R	Result Order Code	Must be CPT code or CDT Code (for Dental Procedures)
/code/@displayName	R	Result Order Name	
/code/@codeSystemName	R	Result Order CodeSystemName	Must be CPT or CDT
/code/@codeSystem	R	Result Order CodeSystem	Must be one of the below: 2.16.840.1.113883.6.12 (CPT) or 2.16.840.1.113883.6.13 (CDT)
/effectiveTime/@value	R	Result Date Time	
/statusCode/@code	R	Result Status	Value must be either active, completed, corrected, OR cancelled
/entry/organizer/informant/ assignedEntity/representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.



Section Field	Req	Field Name	Comments
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.
/entry/organizer/component/procedure/	R	Order Information	
/id[@assigningAuthorityName = "XXXXX-PlacerId"]/@extension	O	Result Order Placer Id	Unique Order Id as created by EMR system.
/code/@code	R	Result Order Code	Must be CPT code or CDT Code (for Dental Procedures)
/code/@displayName	R	Result Order Name	
/code/@codeSystemName	R	Result Order CodeSystemName	Must be CPT or CDT
/code/@codeSystem	R	Result Order CodeSystem	Must be one of the below: 2.16.840.1.113883.6.12 (CPT) or 2.16.840.1.113883.6.13 (CDT)
/effectiveTime/@value	R	Result Date Time	
/statusCode/@code	R	Result Status	Value must be either active, completed, corrected, OR cancelled
/entry/organizer/component/procedure/specimen/	O	Specimen Information	
/specimenRole/specimenPlayingEntity/code/@code	O	Specimen Code	
/specimenRole/specimenPlayingEntity/code/@displayName	O	Specimen Name	
/entry/organizer/component/procedure/performer	O	Ordered By	
/assignedEntity/id/@extension	RA	Identifier	License Number of the Clinician.
/assignedEntity/id/@root	RA	Assigning Authority	Assigning Authority of the License. MOHAP: 2.16.840.1.113883.3.8991 DHA: 2.16.840.1.113883.3.9029



Section Field	Req	Field Name	Comments
			HAAD (DOH): 2.16.840.1.113883.3.3079
/assignedEntity/assignedPerson/name/family	O	Family Name	Clinician Name
/assignedEntity/assignedPerson/name/given	O	Given Name	Clinician Name
/entry/organizer/component/observation/	R	Result Observation	
/templateId/@root	R	Result Component Template Id	Must be: 2.16.840.1.113883.10.20.22.4.2
/code/@code	R	Observation Code	Must be LOINC Code
/code/@displayName	R	Observation Description	
/code/@codeSystem	R	Observation Code System	Must be: 2.16.840.1.113883.6.1
/code/@codeSystemName	RA	Observation Code System Name	Must be: LN
/code/originalText	O	Observation Original Text	Original result component name from EMR System
/text/reference/@value	R	Observation Text	Result Values as text
/statusCode/@code	R	Observation Status	Must be either completed, final, partial, preliminary, active, entered, corrected, deleted, in progress, cancelled, cannot result, not tested, updated to final or wrong
/effectiveTime/@value	R	Observation Date time	
/value/@xsi:type	R	Observation Type	If value/@xsi:type equals 'PQ' or 'ST', then IsNumeric is true. Otherwise, IsNumeric is false. For Textual results value/@xsi:type must be 'ED'
/value/@value	R	Observation Value	Note: For Radiology results must not have below three attributes. /entry/organizer/component/observation/text/reference/@value /entry/organizer/component/observation/value/@value /entry/organizer/component/observation/value/text



Section Field	Req	Field Name	Comments
			<p>if any of these nodes or attributes exists, then result will be considered as Lab result.</p> <p>For Radiology Results Report use /entry/organizer/component/observation/text</p> <p>For Lab Numeric Result use /entry/organizer/component/observation/value/@value For Lab Textual Results attribute @xsi:type must have value 'ST' and result text in /entry/organizer/component/observation/value/text</p>
/interpretationCode/@code	O	Interpretation Code	Codes specifying a rough qualitative interpretation of the observation, such as "normal", "abnormal", "below normal", "change up", "resistant", "susceptible", etc.,.
/referenceRange/observationRange/value	RA	Reference Range	Mandatory for Numeric Results
/entryRelationship/act[code/@code='48767-8']/text	O	Comments	
/entry/organizer/component/encounter/	R	Encounter Information	
/id/@extension	R	Encounter Number	Encounter Id from EMR system.
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.

6.11 Vital Signs

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	For all the templates with Vital Signs Section - entries optional (2.16.840.1.113883.10.20.22.2.4) map the Template Id of Vital Signs Section - entries required (2.16.840.1.113883.10.20.22.2.4.1) as well.
/code/code	R	Section Code	Must be: 8716-3
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/organizer/templateId/@root			Must be: 2.16.840.1.113883.10.20.22.4.26
/entry/organizer/code/code	R	Vital Signs Organizer Code	Must be: 46680005
/entry/organizer/code/codeSystem	R	Vital Signs Organizer Code System	Must be: 2.16.840.1.113883.6.96
/entry/organizer/code/codeSystemName	RA	Vital Signs Organizer Code System Name	Must be: SNOMED CT
/entry/organizer/author/assignedAuthor	O	Entered By	
/code/@displayName	R	Code	If CDA @displayName is not available then assignedPerson/name is considered.
/code/@displayName	R	Description	If CDA @displayName is not available, then assignedPerson/name is considered.
/entry/organizer/component/observation	R	Observation	
/templateId/@root	R		Must be: 2.16.840.1.113883.10.20.22.4.27
/effectiveTime	R	Observation Date Time	
/code/@code	R	Observation Code	Must be LOINC codes
/code/@codeSystem	R	Observation Code System	Must be LOINC
/code/@displayName	R	Observation Description	Vital Observation Description



/value/@value	R	Observation Value	If the Result Value Unit is not available then the Result Value is imported from CDA value/text() instead of value/@value.
/value/@unit		Observation Value Units	Not used. The Unit values are defined in Riayati HIE for each Vital Observations.
/entry/organizer/component/observation/performer	O	Observation Clinician	
/assignedEntity/id/@extension	RA	Identifier	License Number of the Clinician.
/assignedEntity/id/@root	RA	Assigning Authority	Assigning Authority of the License. MOHAP: 2.16.840.1.113883.3.8991 DHA: 2.16.840.1.113883.3.9029 HAAD (DOH): 2.16.840.1.113883.3.3079
/assignedEntity/assignedPerson/name/family	O	Family Name	Clinician Name
/assignedEntity/assignedPerson/name/given	O	Given Name	Clinician Name
/entry/organizer/component/observation/entryRelationship/act[code/@code='48767-8']/text	O	Observation Comments	
/entry/organizer/informant/representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.
/entry/organizer/component/encounter	R	Observation.Encounter	
/id/@extension	R	Encounter Number	Encounter Id from EMR system.
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.

6.12 Family History

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	Must be: 2.16.840.1.113883.10.20.22.2.15
/code/code	R	Section Code	Must be: 10157-6
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/organizer/templateId/@root	R		Must be: 2.16.840.1.113883.10.20.22.4.45
/entry/organizer/subject/relatedSubject	R	Family Member	
/code/@code	R	Code	Must be HL7 Role Code.
/code/@codeSystem	R	Code System	Must be "2.16.840.1.113883.5.111" (HL7 Role Code).
/code/@displayName	R	Description	Description of the Role Code.
/code/originalText	O	Original Text	Original Relationship from the EMR System.
/entry/organizer/component/observation/	R	Family History Observation	
/templateId/@root	R		Must be: 2.16.840.1.113883.10.20.22.4.46
/effectiveTime/high/@value	O	To Time	If only CDA effectiveTime/@value is present then both From Time and To Time are imported from that value.
/effectiveTime/low/@value	O	From Time	If only CDA effectiveTime/@value is present then both From Time and To Time are imported from that value.
/value	R	Family History Diagnosis	
/@code	R	Code	ICD 10 (OR) SNOMED CT Code.
/@codeSystem	R	Code System	ICD 10 OR SNOMED CT



Section Field	Req	Field Name	Comments
/@displayName	R	Description	Problem / Diagnosis Description
/originalText	O	Original Text	Original Text from the EMR System.
/entry/organizer/component/ observation/author/assignedAuthor	O	Family History Entered By	Department where Family information was captured.
/code/@displayName	R	Code	If CDA @displayName is not available, then assignedPerson/name is considered.
/code/@displayName	R	Description	If CDA @displayName is not available, then assignedPerson/name is considered.
/entry/organizer/component/observation/ entryRelationship/act[code/@code='48767-8']	O	Note	
text	R	Note Text	
/entry/organizer/component/observation/ entryRelationship/observation[code/@code='33999-4']	O	Status	
value/@code	R	Status	If @code = 55561003 then Status will be Active, else Inactive.
/entry/organizer/component/observation/Informant/ assignedEntity/representedOrganization/	O	Family History Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE.
/name	O	Description	Must be name given for code in field above.

6.13 Social History

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	Must be: 2.16.840.1.113883.10.20.22.2.17
/code/code	R	Section Code	Must be: 29762-2
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/observation	R	Social History Observation	
/templateId/@root	R		Must be: 2.16.840.1.113883.10.20.22.4.38
/code/	R	Social History Category	
/@code	R	Code	LOINC Code for Social History Type.
/@codeSystem	R	Code System	Must be: 2.16.840.1.113883.6.1
/@displayName	O	Description	
/originalText	O	OriginalText	Original Text from the EMR.
/effectiveTime/	R	Effective Time	
/low/@value	R	From Time	If effectiveTime/@value is present, then both From Time and To Time are imported from that value.
/high/@value	O	To Time	If effectiveTime/@value is present, then both From Time and To Time are imported from that value.
/value/	R	Social History Habit	
/@code	R	Code	SNOMED CT Code
/@codeSystem	R	Code System	Must be: 2.16.840.1.113883.6.96
/@displayName	O	Description	



Section Field	Req	Field Name	Comments
/originalText	O	OriginalText	Original Text from EMR
/entry/observation/author/assignedAuthor	O	Entered By	
/code/@displayName	R	Code	If @displayName is not available and assignedPerson is available, then assignedPerson/name is imported.
/code/@displayName	R	Description	If @displayName is not available and assignedPerson is available, then assignedPerson/name is imported
/entry/observation/entryRelationship/observation [code/@code='33999-4']	O	Status	
value	R	Status	CDA value code of 55561003 is imported as "A". All other values - including blank - are imported as "I".
/entry/observation/entryRelationship/observation [code/@code='48767-8']	O	Comments	
value	R	Comments	
/entry/observation/informant/representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.

6.14 Functional Status

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	Must be: 2.16.840.1.113883.10.20.22.2.14
/code/code	R	Section Code	Must be: 47420-5
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/observation/	R	Problem	
/templateId/@root	R		For the Functional Status Observation (2.16.840.1.113883.10.20.22.4.67) map the Template Id of Functional Status Problem Observation (2.16.840.1.113883.10.20.22.4.68) as well.
/code/@code	R	Problem Category Code	Must be 248536006 (Functional Status) OR 373930000 (Cognitive function)
/code/@codeSystem	R	Problem Category Code System	Must be: 2.16.840.1.113883.6.96
/code/@displayName	R	Problem Category Description	Functional Status OR Cognitive function
/text	R	Problem Details	
/effectiveTime/low/@value	R	From Time	
/effectiveTime/high/@value	O	To Time	
/value/@code	R	Problem Code	Should be an ICD 10 Code
/value/@displayName	R	Problem Description	Name of the problem as per ICD 10 text.
/performer	O	Problem Clinician	
/assignedEntity/id/@extension	RA	Identifier	License Number of the Clinician.
/assignedEntity/id/@root	RA	Assigning Authority	Assigning Authority of the License. MOHAP: 2.16.840.1.113883.3.8991



Section Field	Req	Field Name	Comments
			DHA: 2.16.840.1.113883.3.9029 HAAD (DOH): 2.16.840.1.113883.3.3079
/assignedEntity/assignedPerson/name/family	O	Family Name	Clinician Name
/assignedEntity/assignedPerson/name/given	O	Given Name	Clinician Name
/entryRelationship/act[code/@code='48767-8']/text	O	Problem Comments	
/entry/observation/informant/ representedOrganization/	O	Entered At	If informant is not present and if document-level informant is present, then document-level informant is used else document-level author is used.
/id/@root	R	Code	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.
/name	O	Description	Must be name given for code in field above.
/entry/observation/entryRelationship[@typeCode='SUBJ']/encounter	R	Problem Encounter	
/id/@extension	R	Encounter Number	Encounter Id from EMR system.
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE. Facility OID will be assigned during implementation.



6.15 Assessment and Plan

Section Field	Req	Field Name	Comments
/templateId/root	R	Template Id	Must be: 2.16.840.1.113883.10.20.22.2.9
/code/code	R	Section Code	Must be: 51847-2
/code/codeSystem	R	Section Code System	Must be: 2.16.840.1.113883.6.1
/code/codeSystemName	RA	Section Code System Name	Must be: LN
/entry/act/	R	Document	
/templateId/@root	R		Must be: 2.16.840.1.113883.10.20.22.4.39
/code/@code	R	Document Name Code	
/code/@codeSystem	R	Document Name CodeSystem	Must be: 2.16.840.1.113883.6.96
/code/@displayName	R	Document Name Description	
/code/originalText	RA	Document Note Text	The Document Note Text is imported from the first found of CDA comment entryRelationship, the text element, or code/originalText.
/text/reference/@value	RA	Document Note Text	The Document Note Text is imported from the first found of CDA comment entryRelationship, the text element, or code/originalText.
/effectiveTime/low/@value	R	From Time	
/effectiveTime/high/@value	O	To Time	
/entry/act/entryRelationship[@typeCode='SUBJ']/encounter	R	Document Encounter	
/id/@extension	R	Encounter Number	Encounter Id from EMR system.
/id/@root	R	Encounter Facility OID	Must contain value of Facility OID, as assigned by Riayati HIE.
/entry/act/entryRelationship[@typeCode='SUBJ']/act[templateId/@root='2.16.840.1.113883.3.88.11.83.11']	RA	Document Note Text	
/text	R	Document Note Text	The Document Note Text is imported from the first found of CDA comment entryRelationship, the text element, or code/originalText.