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Diagnostic Report

CDA Implementation Guide

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Diagnostic Report Conformance Profile	Version 1.0.0, Not yet published
CDA Rendering Specification	Version 1.0, Issued 07 March 2012
Diagnostic Report Information Requirements	Version 1.0, Not yet published
HL7 Clinical Document Architecture	Release 2, January 2010
Representing Coding in CDA Documents Implementation Guidance	Version 1.0, Issued 10 October 2011

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List of Examples

1 Introduction

This implementation guide is an *HL7 Clinical Document Architecture [HL7CDAR2]* specification to represent a Diagnostic Report, as a document, to be electronically exchanged between healthcare providers, and between healthcare providers and the My Health Record system infrastructure in Australia. A Diagnostic Report is created by an authoring diagnostic service provider in response to a diagnostic procedure order and contains the results of one or more diagnostic investigations and may contain a specialist or other healthcare provider's analysis of the results of one or more diagnostic investigations.

Note

This implementation guide is an early development draft made available to foster internal discussions regarding aspects of document structure and presentation.

1.1 How to read this document

This implementation guide contains descriptions of both constraints on HL7 CDA and, where necessary, custom extensions to the HL7 CDA, for the purposes of fulfilling the requirements for Australian implementations of diagnostic reports. These constraints are defined as a set of templates.

For implementers interested in diagnostic reports, the following CDA templates are the recommended starting points, each of which reference the additional templates necessary to assert conformance for this implementation guide:

- For sending a short form rich text representation of a Diagnostic Report to the My Health Record - ClinicalDocument (My Health Record Other Diagnostic Report)
- For sending an atomic representation of a Diagnostic Report - ClinicalDocument (Atomic Other Diagnostic Report)

Chapters that may be of primary interest are organised as follow:

- ??? - defines the conformance requirements applicable to a clinical document instance claiming conformance to a `ClinicalDocument` template defined in this implementation guide or any derived conformance profile.
- 2 *CDA Header templates* - contains the CDA Header templates that apply across all of the supported usage scenarios in this implementation guide.
- 3 *Document CDA templates* - defines the `ClinicalDocument` template for each logical model of a document-level usage scenario, e.g. Other Diagnostic Report, in this implementation guide.
- 4 *Section CDA templates* - defines the `section` templates referenced by a `ClinicalDocument` template in this implementation guide.
- 5 *Participation CDA templates* - defines the templates for individuals and organisations, called participations, referenced by other templates in this implementation guide.
- 6 *Entity CDA templates* - defines the templates for entities referenced by a participation template in this implementation guide.
- 7 *Act CDA templates* - defines the templates for entry-level classes, called acts, referenced by other templates in this implementation guide.
- Appendix B, *Examples* - provides examples demonstrating a document-level usage model, e.g. Other Diagnostic Report, and that conform to the CDA templates defined in this implementation guide.

1.2 Editorial note

This implementation guide is an early working specification that is available for comment and review. It may be used to solicit feedback and to provide insight as to the expected content in a forthcoming stable and approved version of the specification.

This implementation guide may not considered to be complete enough or sufficiently reviewed to be safe for implementation and use in production systems. It may have known issues and still be in development.

It is intended to supersede *???* and *???*. This new, backwards incompatible version, is intended to address alignment to HL7 FHIR and is the result of work undertaken in conjunction with HL7 Australia.

1.3 Known issues

This section lists known issues with this specification at the time of publishing. We are working on solutions to these issues and encourage comments to help us develop these solutions.

Reference	Description
Diagnostic Report Information Requirements	The *Diagnostic Report Information Requirements [DH2021b]* are in an unapproved draft state.
Diagnostic Report FHIR Implementation Guide	The *Diagnostic Report FHIR Implementation Guide [DH2021a]* (Draft for internal use) is in active development and rapid changes are occurring. The rendered build is not yet available as a navigable website but can be obtained via https://github.com/AuDigital-Health/ci-fhir-r4/blob/master/output/DiagnosticReport/full-ig.zip (download the file full-ig.zip, unzip it and open index.html in a browser).
Diagnostic Report CDA Implementation Guide (this document)	This is a work in progress.
Mapping table Logical type representation inconsistency	A number of CDA template chapters represent the logical type value with a hyperlink to their associated FHIR datatype definition, whereas other chapters have this hyperlink removed. This is to provide a contrasting representation to foster internal discussions.
State of mapping tables	The majority of the CDA mapping xpaths and constraints in the mapping tables are in very early development and as such should not be relied upon to build actual instances.
Source material errors	Material in this specification is based on existing standards and all efforts have been made to minimise divergence. Issues of an editorial nature in the source material (such as spelling or punctuation errors in an element description) are intentionally reproduced.
Composition > identifier mapping	It is undetermined whether mapping the logical element Composition > identifier to the CDA /ClinicalDocument/setId is appropriate to represent all business identifiers for compositions.
v3 Code System ParticipationType value set	The v3 Code System ParticipationType value set is bound to /participant/@typeCode in CDA templates based on the participant class (e.g. participant (Identified Organization)). This FHIR value set has 3 more members than what is allowed by the the CDA bound schema vocabulary, "ALY", "CAT" and "TPA". In future, a more constrained value set will be developed to replicate the CDA schema vocabulary.
RoleClass value set	The RoleClass value set is bound to /participant/associatedEntity/@classCode in CDA templates based on the participant class (e.g. participant (Identified Organization)). This FHIR value set has more members than what is allowed by the the CDA bound schema vocabulary. In future, a more constrained value set will be developed to replicate the CDA schema vocabulary.

Reference	Description
Australian and New Zealand Standard Industrial Classification (ANZSIC)	FHIR termininology resources, such as value set and code system, have not yet been developed to support Australian and New Zealand Standard Industrial Classification (ANZSIC) terminology. Forthcoming work is expected to result in an authoritative value set and code system published in the National Clinical Terminology Service (NCTS). In the meantime, implementers can obtain the values for code following the above ANZSIC hyperlink, on the downloads tab. The codeSystem OID to use is 1.2.36.1.2001.1005.47.
ServiceRequest > identifier	The CDA constraints and comments are incomplete for this element. Guidance how CDA can be constructed, including how this mandatory element can be instantiated in the absence of an identifier, will be included in a forthcoming version of this specification.
ServiceRequest > status	ServiceRequest > status is not currently mapped into CDA. This element is not directly supported in CDA as a separate element of the order class. Some meaning is implicit given the context of a diagnostic report with a fulfills relationship to that order. If there is a need to support this concept as distinct element in CDA then future releases of this implementation guide may include one or more mappings to support this concept, possibly via the introduction of an extension to the order class.
ServiceRequest > requester	The element ServiceRequest > requester is missing the template to support PractitionerRole. This will be developed in a future draft.
Appendix B. Examples	This appendix contains a single instance in early development.
Appendix C. Mapping from requirements	This appendix is currently a placeholder.

2 CDA Header templates

This chapter contains the CDA Header requirements for this implementation guide; these are infrastructure or control requirements that are not sourced from the Diagnostic Report model.

All the definitions in this chapter are sourced from HL7 Clinical Document Architecture, Release 2 [HL7CDAR2].

2.1 ClinicalDocument

This template is referenced by ClinicalDocument (My Health Record Other Diagnostic Report) and ClinicalDocument (Atomic Other Diagnostic Report).

See ??? for an explanation of mapping table presentation.

CDA mapping

CDA schema element	CDA element description	CDA card	CDA constraints and comments
CDA Header Data Elements		Context: /	
ClinicalDocument	The ClinicalDocument class is the entry point into the CDA R-MIM, and corresponds to the <ClinicalDocument> XML element that is the root element of a CDA document.	1..1	This template **SHALL** be a closed template. All attributes of the ClinicalDocument element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed. All instances of a time value **SHALL** include hours, minutes and a time zone. The CDA document **SHALL** be valid against the Australian Digital Health Agency CDA schema after any additional extensions not in the Australian Digital Health Agency extension namespace have been removed.
ClinicalDocument/**realmCode**	A realmCode signals the imposition of realm-specific constraints. The value identifies the realm in question.	0..*	All attributes of the realmCode element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**typeId**	A technology-neutral explicit reference to the CDA Release 2 specification.	1..1	
ClinicalDocument/typeId/**@extension="POCD_HD000040"**		1..1	The unique identifier for the CDA Release 2 Hierarchical Description.
ClinicalDocument/typeId/**@root="2.16.840.1.113883.1.3"**		1..1	The OID for HL7 Registered models.

CDA schema element	CDA element description	CDA card	CDA constraints and comments
ClinicalDocument/**templateId**	A templateId signals the imposition of a set of template-defined constraints. The value provides a unique identifier for the templates in question.	1..*	All attributes of the templateId element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed. Exactly one template identifier **SHALL** indicate the constraints defined in this mapping table and have @root="1.2.36.1.2001.1001.102.101.100107" . Exactly one template identifier **SHALL** indicate the constraints defined in the CDA Rendering Specification [NEHT2012s] and have @root="1.2.36.1.2001.1001.100.149". In addition to the template identifiers above, a template identifier is expected for the clinical document model as per ???. Additional template identifiers may be required by other specifications. Systems are not required to recognise any other template identifiers than the clinical document model templateId in order to understand the document as a [type] but these identifiers may influence how the document must be handled.
ClinicalDocument/**id**	Represents the unique instance identifier of a clinical document.	1..1	All attributes of the id element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed with the exception that @nullFlavor **SHALL NOT** be present. id/@root **SHALL** be present and it **SHALL** be a UUID or an OID.
ClinicalDocument/**code**	The code specifying the particular kind of document (e.g. History and Physical, Discharge Summary, Progress Note).	1..1	All attributes of the code element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed with the exception that @nullFlavor **SHALL NOT** be present.
ClinicalDocument/**title**	Represents the title of the document.	1..1	
ClinicalDocument/**effectiveTime**	Signifies the document creation time, when the document first came into being. Where the CDA document is a transform from an original document in some other format, the ClinicalDocument.effectiveTime is the time the original document is created.	1..1	All attributes of the effectiveTime element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed with the exception that @nullFlavor **SHALL NOT** be present.
ClinicalDocument/**confidentialityCode/@nullFlavor="NA"**	Codes that identify how sensitive a piece of information is and/or that indicate how the information may be made available or disclosed.	1..1	
ClinicalDocument/**languageCode**	Specifies the human language of character data (whether they be in contents or attribute values).	1..1	<Language Code> – <DIALECT> The <Language Code> **SHALL** be "en". The <DIALECT> **SHOULD** be "AU".
ClinicalDocument/languageCode/**@code**		1..1	
ClinicalDocument/**setId**	Represents an identifier that is common across all document revisions.	1..1	All attributes of the setId element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**versionNumber**	An integer value used to version successive replacement documents.	1..1	
ClinicalDocument/versionNumber/**@value**		1..1	
ClinicalDocument/**ext:completionCode**	The lifecycle status of a document.	1..1	All attributes of the completionCode element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed with the exception that @nullFlavor **SHALL NOT** be present. Australian Healthcare Clinical Document Architecture Document Lifecycle Status (required)
ClinicalDocument/**recordTarget**	Represents the medical record that this document belongs to.	1..1	All attributes and elements of the recordTarget element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**author**	Represents the humans and/or machines that authored the document.	1..*	All attributes and elements of the author element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**dataEnterer**	Represents the participant who has transformed a dictated note into text.	0..1	All attributes and elements of the dataEnterer element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.

CDA schema element	CDA element description	CDA card	CDA constraints and comments
ClinicalDocument/**informant**	Represents an informant (or source of information) who provides relevant information, such as the parent of a comatose patient who describes the patient's behavior prior to the onset of coma. Unless otherwise stated, the patient is implicitly the informant.	0..*	All attributes and elements of the informant element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**custodian**	Represents the organization from which the document originates and that is in charge of maintaining the document. The custodian is the steward that is entrusted with the care of the document. Every CDA document has exactly one custodian.	1..1	All attributes and elements of the custodian element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**informationRecipient**	Represents a recipient who should receive a copy of the document.	0..*	All attributes and elements of the informationRecipient element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**legalAuthenticator**	Represents a participant who has legally authenticated the document.	0..1	All attributes and elements of the legalAuthenticator element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**authenticator**	Represents a participant who has attested to the accuracy of the document, but who does not have privileges to legally authenticate the document. An example would be a resident physician who sees a patient and dictates a note, then later signs it.	0..*	All attributes and elements of the authenticator element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**participant**	Represents a participant not explicitly mentioned by other classes that was somehow involved.	0..*	All attributes and elements of the participant element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**inFulfillmentOf**	Relates the current document to an order this document fulfills (in whole or in part).	0..*	All attributes and elements of the inFulfillmentOf element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**documentationOf**	Relates the current document to the related event that this document is documentation of.	0..*	All attributes and elements of the documentationOf element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**relatedDocument**	Relates the current document to a parent document.	0..*	All attributes and elements of the relatedDocument element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**authorization**	Relates the current document to consents associated with this document. The consent authorizes or certifies acts specified in the current document.	0..*	All attributes and elements of the authorization element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**componentOf**	Relates the current document to the encounter. The current document is a documentation of events that occurred during the encounter.	0..1	All attributes and elements of the componentOf element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.
ClinicalDocument/**component**	Relates the associated document body as a component of the document.	1..1	All attributes and elements of the component element defined by the Australian Digital Health Agency CDA schema **SHALL** be allowed.

3 Document CDA templates

This chapter defines each of the document-level usage scenario models, e.g. Composition (Other Diagnostic Report), as a `ClinicalDocument` template.

3.1 ClinicalDocument (My Health Record Other Diagnostic Report)

The following are the overarching usage scenarios this template is intended to support:

- A clinical information system (CIS) sends or receives a specialist or other diagnostic report document with the My Health Record system
- A contracted service provider (CSP) sends or receives a specialist or other diagnostic report document with the My Health Record system
- A registered portal or registered repository receives a specialist or other diagnostic report document

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
CDA Header Data Elements				Context: /	
DiagnosticReport (Diagnostic Report)	A diagnostic report of specialist or other diagnostic investigations (such as echo cardiogram or colonoscopy or hearing test) sent from the service provider to the requester, i.e. the results including any images/empirical data plus any interpretation provided, for an individual's diagnostic examination.	0..*	DiagnosticReport	**ClinicalDocument**	In addition to the template defined in this mapping table, ClinicalDocument **SHALL** conform to the template defined in ClinicalDocument. TBD need to tighten rules on supply of result obs??? though is this possible in an open template that allows for local extensions???? ClinicalDocument **SHALL** contain one and only one author (ClinicalDocument/author). ClinicalDocument **SHALL** contain one and only one recordTarget (ClinicalDocument/recordTarget). ClinicalDocument **SHALL** contain one and only one diagnostic investigations section (ClinicalDocument/component/structuredBody/component[diag_inv]/section).
				ClinicalDocument/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				ClinicalDocument/templateId/**@root="1.2.36.1.2001.1001.102.101.TBD"**	
				ClinicalDocument/**code**	
				ClinicalDocument/code/**@code="47045-0"**	
				ClinicalDocument/code/**@codeSystem="2.16.840.1.113883.6.1"**	LOINC
				ClinicalDocument/code/**@displayName**	displayName **SHOULD** be "Study report".
				ClinicalDocument/**recordTarget**	recordTarget **SHALL** conform to the template defined in ???
				ClinicalDocument/**author**	author **SHALL** conform to the template defined in ???.
				ClinicalDocument/**custodian**	custodian **SHALL** conform to the template defined in ???.
				ClinicalDocument/component/structuredBody/component[diag_inv]/**section**	section **SHALL** conform to the template defined in section (Diagnostic Investigations).
DiagnosticReport (Diagnostic Report) > **identifier**	Identifiers assigned to this report by the performer or other systems.	1..*	Identifier	ClinicalDocument/documentationOf/serviceEvent/**id**	TBD guidance
DiagnosticReport (Diagnostic Report) > **basedOn**	Details concerning a service requested.	1..1	Reference(Order Details for Diagnostic Report)	ClinicalDocument/**inFulfillmentOf**	order **SHALL** conform to the template defined in order (Order Details for Diagnostic Report)
				ClinicalDocument/inFulfillmentOf/**@typeCode="FLFS"**	
				ClinicalDocument/inFulfillmentOf/**order**	

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
DiagnosticReport (Diagnostic Report) > **status**	The status of the diagnostic report.	1..1	code	tbd/**entryRelationship[status]**	TBD exaplanation of why this mapping TBD guidance
				tbd/entryRelationship[report_status]/**@typeCode="COMP"**	
				tbd/entryRelationship[report_status]/**observation**	
				tbd/entryRelationship[report_status]/observation/**@classCode="OBS"**	
				tbd/entryRelationship[report_status]/observation/**@moodCode="EVN"**	
				tbd/entryRelationship[report_status]/observation/**code**	
				tbd/entryRelationship[report_status]/observation/code/**@code="TBD"**	
				tbd/entryRelationship[report_status]/observation/code/**@codeSystem="TBD"**	TBD
				tbd/entryRelationship[report_status]/observation/code/**@displayName**	displayName **SHOULD** be "TBD".
				tbd/entryRelationship[status]/observation/**value**	value/@xsi:type **SHALL** be "CD". DiagnosticReportStatus Report Available (required)
DiagnosticReport (Diagnostic Report) > **category**	A code that classifies the clinical discipline, department or diagnostic service that created the report (e.g. cardiology, biochemistry, hematology, MRI). This is used for searching, sorting and display purposes.	1..*	CodeableConcept	**tbd**	TBD guidance
DiagnosticReport (Diagnostic Report) > **code**	A code or name that describes this diagnostic report.	1..1	CodeableConcept	ClinicalDocument/documentationOf/serviceEvent/**code**	TBD guidance code/originalText or code/@displayName **SHALL** be included. Evaluation Procedure (extensible)
DiagnosticReport (Diagnostic Report) > **subject**	The subject of the report. Usually, but not always, this is a patient. However, diagnostic services also perform analyses on specimens collected from a variety of other sources.	1..1	Reference (Patient with Mandatory Identifier | My Health Record Patient)	ClinicalDocument/**recordTarget**	recordTarget **SHALL** conform to the template defined in: ???.
DiagnosticReport (Diagnostic Report) > **effective[x]**	The time or time-period the observed values are related to. When the subject of the report is a patient, this is usually either the time of the procedure or of specimen collection(s), but very often the source of the date/time is not known, only the date/time itself.	1..1	dateTime | Period	ClinicalDocument/documentationOf/serviceEvent/**effectiveTime**	TBD
DiagnosticReport (Diagnostic Report) > **issued**	The date and time that this version of the report was made available to providers, typically after the report was reviewed and verified.	1..1	instant	ClinicalDocument/**effectiveTime**	TBD
DiagnosticReport (Diagnostic Report) > **performer**	The diagnostic service that is responsible for issuing the report.	1..*	Reference(PractitionerRole with Mandatory Identifier)	ClinicalDocument/documentationOf/serviceEvent/**performer**	performer **SHALL** conform to the template defined in performer (PractitionerRole with Mandatory Identifier).

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
CDA Body Level 3 Data Elements				Context: /ClinicalDocument/component/structuredBody/component[diag_inv]/section/	
DiagnosticReport (Diagnostic Report) > **result**	Observations that are part of this diagnostic report.	1..*	Reference(Simple Other Diagnostic Observation)	**entry[result]** entry[result]/**observation**	TBD guidance observation **SHALL** conform to the template defined in ???.
DiagnosticReport (Diagnostic Report) > **presentedForm**	Rich text representation of the entire result as issued by the diagnostic service. Multiple formats are allowed but they SHALL be semantically equivalent.	0..*	Attachment	**tbd**	

3.2 ClinicalDocument (Atomic Other Diagnostic Report)

The following are the overarching usage scenarios this template is intended to support:

- A CIS sends or receives a specialist or other diagnostic report document with another CIS or CSP
- A CSP sends or receives a specialist or other diagnostic report document with a CIS or another CSP
- A registered portal or registered repository receives a specialist or other diagnostic report document

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
CDA Header Data Elements				Context: /	
DiagnosticReport (Diagnostic Report)	A diagnostic report of specialist or other diagnostic investigations (such as echo cardiogram or colonoscopy or hearing test) sent from the service provider to the requester, i.e. the results including any images/empirical data plus any interpretation provided, for an individual's diagnostic examination.	0..*	DiagnosticReport	**ClinicalDocument**	In addition to the template defined in this mapping table, ClinicalDocument **SHALL** conform to the template defined in ClinicalDocument. ClinicalDocument **SHALL** contain one and only one recordTarget (ClinicalDocument/recordTarget). ClinicalDocument **SHALL** contain one and only one diagnostic investigations section (ClinicalDocument/component/structuredBody/component[diag_inv]/section).
				ClinicalDocument/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				ClinicalDocument/templateId/**@root="1.2.36.1.2001.1001.102.101.TBD"**	
				ClinicalDocument/**code**	
				ClinicalDocument/code/**@code="47045-0"**	
				ClinicalDocument/code/**@codeSystem="2.16.840.1.113883.6.1"**	LOINC
				ClinicalDocument/code/**@displayName**	displayName **SHOULD** be "Study report".
				ClinicalDocument/**recordTarget**	recordTarget **SHALL** conform to the template defined in ???
				ClinicalDocument/**author**	author **SHALL** conform to the template defined in ???.
				ClinicalDocument/**custodian**	custodian **SHALL** conform to the template defined in ???.
				ClinicalDocument/component/structuredBody/component[diag_inv]/**section**	section **SHALL** conform to the template defined in section (Diagnostic Investigations).
DiagnosticReport (Diagnostic Report) > **identifier**	Identifiers assigned to this report by the performer or other systems.	1..*	Identifier	ClinicalDocument/documentationOf/serviceEvent/**id**	TBD guidance
DiagnosticReport (Diagnostic Report) > **basedOn**	Details concerning a service requested.	0..*	Reference(Order Details for Diagnostic Report)	ClinicalDocument/**inFulfillmentOf**	order **SHALL** conform to the template defined in order (Order Details for Diagnostic Report)
				ClinicalDocument/inFulfillmentOf/**@typeCode="FLFS"**	
				ClinicalDocument/inFulfillmentOf/**order**	

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
DiagnosticReport (Diagnostic Report) > **status**	The status of the diagnostic report.	1..1	code	tbd/**entryRelationship[status]**	TBD explanation of why this mapping TBD guidance
				tbd/entryRelationship[report_status]/**@typeCode="COMP"**	
				tbd/entryRelationship[report_status]/**observation**	
				tbd/entryRelationship[report_status]/observation/**@classCode="OBS"**	
				tbd/entryRelationship[report_status]/observation/**@moodCode="EVN"**	
				tbd/entryRelationship[report_status]/observation/**code**	
				tbd/entryRelationship[report_status]/observation/code/**@code="TBD"**	
				tbd/entryRelationship[report_status]/observation/code/**@codeSystem="TBD"**	TBD
				tbd/entryRelationship[report_status]/observation/code/**@displayName**	displayName **SHOULD** be "TBD".
				tbd/entryRelationship[status]/observation/**value**	value/@xsi:type **SHALL** be "CD". DiagnosticReportStatus Report Available (required)
DiagnosticReport (Diagnostic Report) > **category**	A code that classifies the clinical discipline, department or diagnostic service that created the report (e.g. cardiology, biochemistry, hematology, MRI). This is used for searching, sorting and display purposes.	1..*	CodeableConcept	**tbd**	TBD guidance
DiagnosticReport (Diagnostic Report) > **code**	A code or name that describes this diagnostic report.	1..1	CodeableConcept	ClinicalDocument/documentationOf/serviceEvent/**code**	TBD guidance code/originalText or code/@displayName **SHALL** be included. Evaluation Procedure (extensible)
DiagnosticReport (Diagnostic Report) > **subject**	The subject of the report. Usually, but not always, this is a patient. However, diagnostic services also perform analyses on specimens collected from a variety of other sources.	1..1	Reference(Patient with Mandatory Identifier | My Health Record Patient)	ClinicalDocument/**recordTarget**	recordTarget **SHALL** conform to one of the templates defined in: ??? or ???.
DiagnosticReport (Diagnostic Report) > **effective[x]**	The time or time-period the observed values are related to. When the subject of the report is a patient, this is usually either the time of the procedure or of specimen collection(s), but very often the source of the date/time is not known, only the date/time itself.	1..1	dateTime | Period	ClinicalDocument/documentationOf/serviceEvent/**effectiveTime**	TBD
DiagnosticReport (Diagnostic Report) > **issued**	The date and time that this version of the report was made available to providers, typically after the report was reviewed and verified.	1..1	instant	ClinicalDocument/**effectiveTime**	TBD

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
DiagnosticReport (Diagnostic Report) > **performer**	The diagnostic service that is responsible for issuing the report.	1..*	Reference(PractitionerRole with Mandatory Identifier | Organization with Mandatory Identifier)	ClinicalDocument/documentationOf/serviceEvent/**performer**	TBD guidance on relationship between author and performer TBD does organisation work here and how? performer **SHALL** conform to the templates defined in: performer (PractitionerRole with Mandatory Identifier) or performer (Organization with Mandatory Identifier).
CDA Body Level 3 Data Elements				Context: /ClinicalDocument/component/structuredBody/component[diag_inv]/section/	
DiagnosticReport (Diagnostic Report) > **result**	Observations that are part of this diagnostic report.	1..*	Reference(Simple Other Diagnostic Observation | Atomic Other Diagnostic Observation | ??? | ??? | ??? | ???)	**entry[result]** entry[result]/**observation**	TBD guidance (lots to do here) observation **SHALL** conform to one of the templates defined in: ??? or observation (Atomic Other Diagnostic Observation) or ??? or ??? or ??? or ???.
DiagnosticReport (Diagnostic Report) > **conclusion**	Concise and clinically contextualized summary conclusion (interpretation/impression) of the diagnostic report.	0..1	string	**tbd**	
DiagnosticReport (Diagnostic Report) > **conclusionCode**	One or more codes that represent the summary conclusion (interpretation/impression) of the diagnostic report.	0..*	CodeableConcept	**tbd**	
DiagnosticReport (Diagnostic Report) > **presentedForm**	Rich text representation of the entire result as issued by the diagnostic service. Multiple formats are allowed but they SHALL be semantically equivalent.	0..*	Attachment	**tbd**	

4 Section CDA templates

This chapter defines the `section` templates referenced by a `ClinicalDocument` template for a document-level model in 3 *Document CDA templates*.

4.1 section (Diagnostic Investigations)

This template is referenced by ClinicalDocument (My Health Record Other Diagnostic Report), and ClinicalDocument (Atomic Other Diagnostic Report).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
CDA Body Level 3 Data Elements				Context: Comes from linking elements	
section (Diagnostic Investigations)	The root of the sections that make up the composition.	Cardinality comes from linking element	BackboneElement	**section**	
				section/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				section/templateId/**@root="1.2.36.1.2001.1001.102.101.TBD"**	
section (Diagnostic Investigations) > **title**	The label for this particular section. This will be part of the rendered content for the document, and is often used to build a table of contents.	1..1	string	section/**title**	
section (Diagnostic Investigations) > **code**	A code identifying the kind of content contained within the section. This must be consistent with the section title.	1..1	CodeableConcept	section/**code**	
				section/code/**@code="30954-2"**	
				section/code/**@codeSystem="2.16.840.1.113883.6.1"**	LOINC
				section/code/**@displayName**	displayName **SHOULD** be "Relevant diagnostic tests/laboratory data Narrative".
section (Diagnostic Investigations) > **text**	A human-readable narrative that contains the attested content of the section, used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it 'clinically safe' for a human to just read the narrative.	1..1	narrative	section/**text**	

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
section (Diagnostic Investigations) > **entry**	A reference to the actual resource from which the narrative in the section is derived.	1..*	Reference(Simple Other Diagnostic Observation | Atomic Other Diagnostic Observation | ??? | ??? | ??? | ???)	section/**entry[result]/** section/entry[result]/**observation**	TBD guidance (lots to do here) observation **SHALL** conform to one of the templates defined in: ??? or observation (Atomic Other Diagnostic Observation) or ??? or ??? or ??? or ???.

5 Participation CDA templates

This chapter defines the participation templates referenced other templates such as those in 4 *Section CDA templates* and 3 *Document CDA templates*.

5.1 participant (Identified Patient)

This template is referenced by order (Order Details for Diagnostic Report).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
CDA Header Data Elements				Context: /ClinicalDocument/	
Patient	Demographics and other administrative information about an individual receiving care or other health-related services.	Cardinality comes from linking element	Patient	**participant**	Patient **SHALL** have at least one of the following: • name (participant/associatedEntity/associatedPerson/name), or • identifier (participant/associatedEntity/associatedPerson/ext:asEntityIdentifier
				participant[org]/**@typeCode**	This CDA schema element is of type CodedSimpleValue (CS). v3 Code System ParticipationType (required)
				participant/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				participant/templateId/**@root="1.2.36.1.2001.1001.102.101.100104"**	
				participant/**associatedEntity**	
				participant/associatedEntity/**id**	A participant patient is represented in CDA by an associatedEntity with the same id as the patient that is the subject of this document. This id **SHALL** hold the same value as patientRole/id.
				participant/associatedEntity/**code**	
				participant/associatedEntity/code/**@code="ONESELF"**	
				participant/associatedEntity/code/**@codeSystem="2.16.840.1.113883.5.111"**	
				participant/associatedEntity/**associatedPerson**	
Patient > **identifier**	An identifier for this patient.	0..*	Identifier	participant/associatedEntity/associatedPerson/**ext:asEntityIdentifier**	The common pattern Entity Identifier **SHALL** be applied. Recommended mappings for this logical type to CDA (R2) are available: ???.
Patient > **name**	A name associated with the individual.	0..*	HumanName	participant/associatedEntity/associatedPerson/**name**	Recommended mappings for this logical type to CDA (R2) are available: ???.
Patient > **telecom**	A contact detail (e.g. a telephone number or an email address) by which the individual may be contacted.	0..*	ContactPoint	participant/associatedEntity/**telecom**	When sending to the My Health Record, telecom is not expected to be sent. Recommended mappings for this logical type to CDA (R2) are available: ContactPoint.

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Patient > **gender**	Administrative Gender - the gender that the patient is considered to have for administration and record keeping purposes.	0..1	code	participant/associatedEntity/associatedPerson/**ext:administrativeGenderCode**	AdministrativeGender (required)
Patient > **address**	An address for the individual.	0..*	Address	participant/associatedEntity/**addr**	When sending to the My Health Record, address is not expected to be sent. Recommended mappings for this logical type to CDA (R2) are available: ??? | ???.
Patient > **communication**	A language which may be used to communicate with the patient about his or her health.	0..*	BackboneElement	n/a	Not mapped directly for this participant; this is implicit in patientRole/patient/languageCommunication.

5.2 participant (Identified RelatedPerson)

This template is referenced by order (Order Details for Diagnostic Report).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
CDA Header Data Elements				Context: /ClinicalDocument/	
RelatedPerson	Information about a person that is involved in the care for a patient, but who is not the target of healthcare, nor has a formal responsibility in the care process.	Cardinality comes from linking element	RelatedPerson	**participant/**	RelatedPerson **SHALL** have at least one of the following: • name (participant/associatedEntity/associatedPerson/name), or • identifier (participant/associatedEntity/associatedPerson/ext:asEntityIdentifier), or • relationship (participant/associatedEntity/associatedPerson/ext:personalRelationship)
				participant[org]/**@typeCode**	This CDA schema element is of type CodedSimpleValue (CS). v3 Code System ParticipationType (required)
				participant/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				participant/templateId/**@root="1.2.36.1.2001.1001.102.101.100105"**	
				participant/**associatedEntity**	
				participant[org]/associatedEntity/**@classCode**	This CDA schema element is of type CodedSimpleValue (CS). RoleClass (required)
				participant/associatedEntity/**id**	id/@root **SHALL** be present and it **SHALL** be a UUID or an OID.
				participant/associatedEntity/**associatedPerson**	

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
RelatedPerson > **identifier**	Identifier for a person within a particular scope.	0..*	Identifier	participant/associatedEntity/associatedPerson/**ext:asEntityIdentifier**	The common pattern Entity Identifier **SHALL** be applied. Recommended mappings for this logical type to CDA (R2) are available: ???.
RelatedPerson > **patient**	The patient this person is related to.	1..1	Reference(Patient as Identified Patient)	n/a	Not mapped directly for this participant; this is implicit in patientRole.
RelatedPerson > **relationship**	The nature of the relationship between a patient and the related person.	0..*	CodeableConcept	participant/associatedEntity/associatedPerson/**ext:personalRelationship**	The common pattern Personal Relationship **SHALL** be applied.
				participant/associatedEntity/associatedPerson/ext:personalRelationship/**ext:code**	ext:personalRelationship/ext:code/originalText or ext:personalRelationship/ext:code/@displayName **SHALL** be included. ext:personalRelationship/ext:code Related Person Relationship Type (extensible)
RelatedPerson > **name**	A name associated with the person.	0..*	HumanName	participant/associatedEntity/associatedPerson/**name**	Recommended mappings for this logical type to CDA (R2) are available: ???.
RelatedPerson > **telecom**	A contact detail for the person, e.g. a telephone number or an email address.	0..*	ContactPoint	participant/associatedEntity/**telecom**	Recommended mappings for this logical type to CDA (R2) are available: ContactPoint.
RelatedPerson > **gender**	Administrative Gender - the gender that the person is considered to have for administration and record keeping purposes.	0..1	code	participant/associatedEntity/associatedPerson/**ext:administrativeGenderCode**	AdministrativeGender (required)
RelatedPerson > **birthDate**	The date on which the related person was born.	0..1	date	participant/associatedEntity/associatedPerson/**ext:birthTime**	
RelatedPerson > **address**	Address where the related person can be contacted or visited.	0..*	Address	participant/associatedEntity/**addr**	Recommended mappings for this logical type to CDA (R2) are available: ??? | ???.
RelatedPerson > **period**	The period of time during which this relationship is or was active. If there are no dates defined, then the interval is unknown.	0..1	Period	participant/associatedEntity/associatedPerson/ext:personalRelationship/**ext:effectiveTime**	
RelatedPerson > **communication**	A language which may be used to communicate with about the patient's health.	0..*	BackboneElement	participant/associatedEntity/associatedPerson/**ext:languageCommunication**	The common pattern Language Communication **SHALL** be applied.
RelatedPerson > communication > **language**	The ISO-639-1 alpha 2 code in lower case for the language, optionally followed by a hyphen and the ISO-3166-1 alpha 2 code for the region in upper case; e.g. 'en' for English, or 'en-US' for American English versus 'en-EN' for England English.	1..1	CodeableConcept	participant/associatedEntity/associatedPerson/ext:languageCommunication/**languageCode**	This CDA schema element is of type CodedSimpleValue (CS). Common Languages in Australia (extensible)
RelatedPerson > communication > **preferred**	Indicates whether or not the patient prefers this language (over other languages he masters up a certain level).	0..1	boolean	participant/associatedEntity/associatedPerson/ext:languageCommunication/**preferenceInd**	

5.3 participant (Identified Organization)

This template is referenced by order (Order Details for Diagnostic Report).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
CDA Header Data Elements				Context: /ClinicalDocument/	
Organization	A formally or informally recognized grouping of people or organizations formed for the purpose of achieving some form of collective action. Includes companies, institutions, corporations, departments, community groups, healthcare practice groups, payer/insurer, etc.	Cardinality comes from linking element	Organization	**participant[org]**	Organization **SHALL** have at least one of the following: • name (participant[org]/associatedEntity/scopingOrganization/name), or • identifier (participant[org]/associatedEntity/scopingOrganization/ext:asEntityIdentifier)
				participant[org]/**@typeCode**	This CDA schema element is of type CodedSimpleValue (CS). v3 Code System ParticipationType (required)
				participant[org]/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				participant[org]/templateId/**@root="1.2.36.1.2001.1001.102.101.100103"**	
				participant[org]/**associatedEntity**	
				participant[org]/associatedEntity/**@classCode**	This CDA schema element is of type CodedSimpleValue (CS). RoleClass (required)
				participant[org]/associatedEntity/**id**	id/@root **SHALL** be present and it **SHALL** be a UUID or an OID.
				participant[org]/associatedEntity/**scopingOrganization**	

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Organization > **identifier**	Identifier for the organization that is used to identify the organization across multiple disparate systems.	0..*	Identifier	participant[org]/associatedEntity/scopingOrganization/**ext:asEntityIdentifier**	When sending to the My Health Record system, an HPI-O is expected. The common pattern Entity Identifier **SHALL** be applied. Recommended mappings for this logical type to CDA (R2) are available: ???.
Organization > **type**	The kind(s) of organization that this is.	0..*	CodeableConcept	participant[org]/associatedEntity/scopingOrganization/**standardIndustryClassCode**	In CDA the maximum occurrences of standardIndustryClassCode is 1. Although the model indicates that code is 0..*, in a CDA implementation this is limited to 0..1. standardIndustryClassCode/originalText or standardIndustryClassCode/@displayName **SHALL** be included. Healthcare Organisation Role Type (preferred) Australian and New Zealand Standard Industrial Classification (ANZSIC) (preferred)
Organization > **name**	A name associated with the organization.	0..1	string	participant[org]/associatedEntity/scopingOrganization/**name[org_name]**	When sending to the My Health Record system, a name is expected. In CDA name and alias are represented by scopingOrganization/name.
Organization > **alias**	A list of alternate names that the organization is known as, or was known as in the past.	0..*	string	participant[org]/associatedEntity/scopingOrganization/**name[alias]**	In CDA name and alias are represented by scopingOrganization/name.
Organization > **telecom**	A contact detail for the organization.	0..*	ContactPoint	participant[org]/associatedEntity/**telecom**	telecom/@use Organization Telecom Use HL7 V3 (required)[1]. Recommended mappings for this logical type to CDA (R2) are available: ContactPoint.
Organization > **address**	An address for the organization.	0..*	Address	participant[org]/associatedEntity/**addr**	addr/@use Organization Address Use HL7 V3 (required)[2]. Recommended mappings for this logical type to CDA (R2) are available: ??? | ???.
Organization > **partOf**	The organization of which this organization forms a part.	0..1	Reference(Identified Organization)	participant[org]/associatedEntity/scopingOrganization/**asOrganizationPartOf** participant[org]/associatedEntity/scopingOrganization/asOrganizationPartOf/**wholeOrganization**	wholeOrganization **SHALL** conform to the template defined in wholeOrganization (Identified Organization).
Organization > **contact**	Contact for the organization for a certain purpose.	0..*	BackboneElement	**participant[org_contact]**	participant[org_contact] **SHALL** conform to the template defined in participant (Organization contact).

[1]This value set differs from the value set bound to use in ContactPoint due to constraints on @use in the HL7 CDA Schema. The concept map v3 map for ContactPointUse provides a mapping between the two value sets.

[2]This value set differs from the value set bound to use in Address due to constraints on @use in the HL7 CDA schema. The concept map v3 map for AddressUse provides a mapping between the two value sets.

5.4 participant (Organization contact)

This template is referenced by participant (Identified Organization) and wholeOrganization (Identified Organization).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
CDA Header Data Elements				Context: /ClinicalDocument/	
Organization > **contact**	Contact for the organization for a certain purpose.	Cardinality comes from linking element	BackboneElement	**participant[org_contact]**	
				participant[org_contact]/**@typeCode="IND"**	
				participant[org_contact]/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				participant[org_contact]/templateId/**@root="1.2.36.1.2001.1001.102.101.100035"**	
				participant[org_contact]/**associatedEntity**	
				participant[org_contact]/associatedEntity/**@classCode="CON"**	
				participant[org_contact]/associatedEntity/**scopingOrganization**	
				participant[org_contact]/associatedEntity/scopingOrganization/**id**	Organization > contact is represented in CDA by a participant that is scoped by the Organization for which they are a contact. This id **SHALL** hold the same value as the organization this is a contact for (the value in this id element **SHALL** be present in a separate participation). id/@root **SHALL** be present and it **SHALL** be a UUID or an OID.
Organization > contact > **purpose**	Indicates a purpose for which the contact can be reached.	0..1	CodeableConcept	participant[org_contact]/associatedEntity/**code**	code/originalText or code/@displayName **SHALL** be included. Contact Purpose Extended (extensible)
Organization > contact > **name**	A name associated with the contact.	0..1	HumanName	participant[org_contact]/associatedEntity/**associatedPerson**	
				participant[org_contact]/associatedEntity/associatedPerson/**name**	Recommended mappings for this logical type to CDA (R2) are available: ???.
Organization > contact > **telecom**	A contact detail (e.g. a telephone number or an email address) by which the party may be contacted.	0..*	ContactPoint	participant[org_contact]/associatedEntity/**telecom**	Recommended mappings for this logical type to CDA (R2) are available: ContactPoint.
Organization > contact > **address**	Visiting or postal addresses for the contact.	0..1	Address	participant[org_contact]/associatedEntity/**addr**	Recommended mappings for the complex data type to CDA (R2): ???.

5.5 performer (PractitionerRole with Mandatory Identifier)

This template is referenced by ClinicalDocument (My Health Record Other Diagnostic Report) and ClinicalDocument (Atomic Other Diagnostic Report).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Conformance level comes from linking elements				Context: Comes from linking elements	
PractitionerRole	A specific set of Roles/Locations/specialties/services that a practitioner may perform at an organization for a period of time.	Cardinality comes from linking element	PractitionerRole	**performer**	
				performer/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				performer/templateId/**@root="1.2.36.1.2001.1001.102.101.TBD"**	
				performer/**assignedEntity**	
				performer/assignedEntity/**assignedPerson**	
				performer/assignedEntity/assignedPerson/**id**	id/@root **SHALL** be present and it **SHALL** be a UUID or an OID.
PractitionerRole > **identifier**	Business Identifiers that are specific to a role/location.	1..*	Identifier	TBD/**ext:asEntityIdentifier**	When sending to the My Health Record, an HPI-I is expected. The cardinality of ext:asEntityIdentifier **SHALL** be interpreted as 1..*. The common pattern Entity Identifier **SHALL** be applied. Recommended mappings for this logical type to CDA (R2) are available: ???.
PractitionerRole > **practitioner**	Practitioner that is able to provide the defined services for the organization.	0..1	Reference(TBD)	TBD/**assignedPerson**	assignedPerson **SHALL** conform to the template defined in ???.
PractitionerRole > **organization**	The organization where the Practitioner performs the roles associated.	0..1	Reference(TBD)	TBD/**representedOrganization**	representedOrganization **SHALL** conform to the template defined in ???.
PractitionerRole > **code**	Roles which this practitioner is authorized to perform for the organization.	0..*	CodeableConcept	TBD/**code**	code/originalText or code/@displayName **SHALL** be included. Australian and New Zealand Standard Classification of Occupations (preferred) or Practitioner Role (preferred)
PractitionerRole > **specialty**	Specific specialty of the practitioner.	0..*	CodeableConcept	TBD	TBD
PractitionerRole > **location**	The location(s) at which this practitioner provides care.	0..*	Reference(Location)	TBD	TBD
PractitionerRole > **healthcareService**	The list of healthcare services that this worker provides for this role's Organization/Location(s).	0..*	Reference(HealthcareService)	TBD	TBD

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
PractitionerRole > **telecom**	Contact details that are specific to the role/location/service.	0..*	ContactPoint	TBD/**telecom**	Recommended mappings for this logical type to CDA (R2) are available: ContactPoint.

5.6 performer (Organization with Mandatory Identifier)

This template is referenced by ClinicalDocument (Atomic Other Diagnostic Report).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Conformance level comes from linking elements				Context: Comes from linking elements	
Organization	A formally or informally recognized grouping of people or organizations formed for the purpose of achieving some form of collective action. Includes companies, institutions, corporations, departments, community groups, healthcare practice groups, payer/insurer, etc.	Cardinality comes from linking element	Organization	**performer[org]/**	
TBD			TBD	**TBD**	

5.7 performer (PractitionerRole with Mandatory Identifier)

This template is referenced by ??? and observation (Atomic Other Diagnostic Observation).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Conformance level comes from linking elements				Context: Comes from linking elements	
PractitionerRole	A specific set of Roles/Locations/specialties/services that a practitioner may perform at an organization for a period of time.	Cardinality comes from linking element	PractitionerRole	**observation/TBD**	
TBD			TBD	TBD	

5.8 performer (Organization with Mandatory Identifier)

This template is referenced by ??? and observation (Atomic Other Diagnostic Observation).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logic-al card	Logical type	CDA schema element	CDA constraints and comments
Conformance level comes from linking elements				Context: Comes from linking elements	
Organization	A formally or informally recognized grouping of people or organizations formed for the purpose of achieving some form of collective action. Includes companies, institutions, corporations, departments, community groups, healthcare practice groups, payer/insurer, etc.	Cardinal-ity comes from linking element	Organization	**observation/TBD**	
TBD			TBD	**TBD**	

6 Entity CDA templates

This chapter contains the entity templates referenced by a participation template in 5 *Participation CDA templates*.

6.1 wholeOrganization (Identified Organization)

This template is referenced by participant (Identified Organization), and wholeOrganization (Identified Organization).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Conformance level comes from linking elements				Context: Comes from linking elements	
Organization	A formally or informally recognized grouping of people or organizations formed for the purpose of achieving some form of collective action. Includes companies, institutions, corporations, departments, community groups, healthcare practice groups, payer/insurer, etc.	Cardinality comes from linking element	Organization	**wholeOrganization**	Organization **SHALL** have at least one of the following: • name (wholeOrganization/name), or • identifier (wholeOrganization/ext:asEntityIdentifier)
				wholeOrganization/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				wholeOrganization/templateId/**@root="1.2.36.1.2001.1001.102.101.100087"**	
				wholeOrganization/**id**	id/@root **SHALL** be present and it **SHALL** be a UUID or an OID.
Organization > **identifier**	Identifier for the organization that is used to identify the organization across multiple disparate systems.	0..*	Identifier	wholeOrganization/**ext:asEntityIdentifier**	The common pattern Entity Identifier **SHALL** be applied. Recommended mappings for this logical type to CDA (R2) are available: ???.
Organization > **type**	The kind(s) of organization that this is.	0..*	CodeableConcept	wholeOrganization/**standardIndustryClassCode**	In CDA the maximum occurrences of wholeOrganization/standardIndustryClassCode is 1. Although the model indicates that code is 0..*, in a CDA implementation this is limited to 0..1. standardIndustryClassCode/originalText or standardIndustryClassCode/@displayName **SHALL** be included. Healthcare Organisation Role Type (preferred) Australian and New Zealand Standard Industrial Classification (ANZSIC) (example)

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Organization > **name**	A name associated with the organization.	0..1	string	wholeOrganization/**name[org_name]**	In CDA name and alias are represented by wholeOrganization/name.
Organization > **alias**	A list of alternate names that the organization is known as, or was known as in the past.	0..*	string	wholeOrganization/**name[alias]**	In CDA name and alias are represented by wholeOrganization/name.
Organization > **telecom**	A contact detail for the organization.	0..*	ContactPoint	wholeOrganization/**telecom**	telecom/@use Organization Telecom Use HL7 V3 (required)[1]. Recommended mappings for this logical type to CDA (R2) are available: ContactPoint.
Organization > **address**	An address for the organization.	0..*	Address	wholeOrganization/**addr**	addr/@use Organization Address Use HL7 V3 (required)[2]. Recommended mappings for this logical type to CDA (R2) are available: ??? | ???.
Organization > **partOf**	The organization of which this organization forms a part.	0..1	Reference(Identified Organization)	wholeOrganization/**asOrganizationPartOf** wholeOrganization/asOrganizationPartOf/**wholeOrganization**	wholeOrganization/asOrganizationPartOf/wholeOrganization **SHALL** conform to the template defined in wholeOrganization (Identified Organization).
CDA Header Data Elements				Context: /ClinicalDocument/	
Organization > **contact**	Contact for the organization for a certain purpose.	0..*	BackboneElement	**participant[org_contact]**	participant[org_contact] **SHALL** conform to the template defined in participant (Organization contact).

[1]This value set differs from the value set bound to use in ContactPoint due to constraints on @use in the HL7 CDA Schema. The concept map v3 map for ContactPointUse provides a mapping between the two value sets.

[2]This value set differs from the value set bound to use in Address due to constraints on @use in the HL7 CDA schema. The concept map v3 map for AddressUse provides a mapping between the two value sets.

7 Act CDA templates

This chapter contains the entry-level templates, called acts (machine readable structured content), referenced by other templates such as those in 4 *Section CDA templates*.

7.1 order (Order Details for Diagnostic Report)

This template is referenced by ClinicalDocument (My Health Record Other Diagnostic Report), and ClinicalDocument (Atomic Other Diagnostic Report).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
CDA Header Data Elements				Context: /ClinicalDocument/inFulfillmentOf/	
ServiceRequest (Order Details for Diagnostic Report)	A record of a request for a diagnostic investigation to be performed.	Cardinality comes from linking element	ServiceRequest	**order**	
				order/**@classCode="ACT"**	
				order/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				order/templateId/**@root="1.2.36.1.2001.1001.102.101.100102"**	
ServiceRequest (Order Details for Diagnostic Report) > **identifier**	Identifiers assigned to this order instance by the orderer and/or the receiver and/or order fulfiller.	0..*	Identifier	order/**id**	Required CDA element. When sending a DR, one identifier is expected to be the local identifier assigned to the order by the order requester (i.e. placer identifier). Recommended mappings for this logical type to CDA (R2) are available: ???.
ServiceRequest (Order Details for Diagnostic Report) > **status**	The status of the order.	1..1	code	n/a	Not currently mapped to CDA. See Known issues.
ServiceRequest (Order Details for Diagnostic Report) > **intent**	Whether the request is a proposal, plan, an original order or a reflex order.	1..1	code	n/a	Not mapped directly for this model; the logical intent of "order" is implicit in order.
ServiceRequest (Order Details for Diagnostic Report) > **code**	A code that identifies a particular service (i.e., procedure, diagnostic investigation, or panel of investigations) that have been requested.	0..1	CodeableConcept	order/**code**	code/originalText or code/@displayName **SHALL** be included. Evaluation Procedure (preferred)

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
ServiceRequest (Order Details for Diagnostic Report) > **subject**	On whom or what the service is to be performed.	1..1	Reference(Patient with Mandatory Identifier | My Health Record Patient)	n/a	Not mapped directly for this model; this is implicit in patientRole.
CDA Header Data Elements				Context: /ClinicalDocument/	
ServiceRequest (Order Details for Diagnostic Report) > **authoredOn**	When the request transitioned to being actionable.	1..1	dateTime	participant[req]/**time**	
ServiceRequest (Order Details for Diagnostic Report) > **requester**	The initiator of the request and who has responsibility for its activation.	1..1	Reference(Identified PractitionerRole | Identified Organization | Identified RelatedPerson | Identified Patient)	**participant[req]** participant[req]/**@typeCode="REF"**	participant[req] **SHALL** conform to one of the templates defined in: ???, participant (Identified Organization), participant (Identified RelatedPerson) or participant (Identified Patient). If participant[req]/associatedEntity/associatedPerson is instantiated, then participant[req]/associatedEntity/associatedPerson/name **SHALL** be present, otherwise participant[req]/associatedEntity/scopingOrganization/name **SHALL** be present.

7.2 observation (Atomic Other Diagnostic Observation)

This template is referenced by ???, ClinicalDocument (Atomic Other Diagnostic Report), and section (Diagnostic Investigations).

See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Observation (A specialist or other diagnostic (not pathology or imaging) investigation)	Measurements and simple assertions made about a patient, device or other subject.	Cardinality comes from linking element	Observation	**observation**	
				observation/**@classCode="OBS"**	
				observation/**@moodCode="EVN"**	
				observation/**templateId**	The use of templateId signals the imposition of a set of template-defined constraints.
				observation/templateId/**@root="TBD"**	
				observation/templateId/**@extension="1.0"**	
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **partOf**	A larger event of which this particular Observation is a component or step. For example, an observation as part of a procedure.	0..*	Reference(Diagnostic Imaging Study)	observation/**tbd**	TBD
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **status**	The status of the result value.	1..1	code	TBD	TBD. Options are: observation/statusCode observation/entryRelationship[status]/observation ObservationStatus Result Available (required)
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **category**	A code that classifies the general type of observation being made.	1..*	CodeableConcept	observation/**TBD**	TBD code/originalText or code/@displayName **SHALL** be included. Observation Category Codes (preferred)
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **code**	Describes what was observed. Sometimes this is called the observation "name".	1..1	CodeableConcept	observation/**code/TBD**	TBD

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **subject**	The patient, or group of patients, location, or device this observation is about and into whose record the observation is placed. If the actual focus of the observation is different from the subject (or a sample of, part, or region of the subject), the focus element or the code itself specifies the actual focus of the observation.	1..1	Reference(My Health Record Patient | Patient with Mandatory Identifier)	n/a	Not mapped directly for this model; this is implicit in patientRole.
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **effective**	The time or time-period the observed value is asserted as being true. For biological subjects - e.g. human patients - this is usually called the "physiologically relevant time". This is usually either the time of the procedure or of specimen collection, but very often the source of the date/time is not known, only the date/time itself.	1..1	dateTime | Period	observation/**effectiveTime**	TBD
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **performer**	Who was responsible for asserting the observed value as "true".	0..*	Reference(PractitionerRole with Mandatory Identifier | Organization with Mandatory Identifier)	observation/**performer**	Guidance TBD performer **SHALL** conform to the templates defined in: performer (PractitionerRole with Mandatory Identifier) or performer (Organization with Mandatory Identifier).

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **value**	The information determined as a result of making the observation, if the information has a simple value.	0..1	Quantity | CodeableConcept | string | boolean | integer | Range | Ratio | SampledData | time | dateTime | Period	observation/**value** (see instantiation choices)	The following is largely TBD. In CDA the value element will need an xsi:type instantiated to declare the type that has been instantiated. **instantiation choices:** If value is an Quantity then value/@xsi:type **SHALL** be "QTY". If value is an CodeableConcept then value/@xsi:type **SHALL** be "CD". value/originalText or value/@displayName **SHALL** be included. If value is an string then value/@xsi:type **SHALL** be "ST". If value is an boolean then value/@xsi:type **SHALL** be "BL". If value is an integer then value/@xsi:type **SHALL** be "TBD". If value is an Range then value/@xsi:type **SHALL** be "IVL_QTY". If value is an Ratio then value/@xsi:type **SHALL** be "RTO". If value is an SampledData then value/@xsi:type **SHALL** be "TBD". If value is an time then value/@xsi:type **SHALL** be "TS". If value is an dateTime then value/@xsi:type **SHALL** be "TBD". If value is an Period then value/@xsi:type **SHALL** be "IVL_TS".
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **dataAbsentReason**	Provides a reason why the expected value in the element Observation.value[x] is missing.	0..1	CodeableConcept	observation/value/**@nullFlavor**	Use of @nullFlavor is risky - TBD. Guidance will be needed; concept map TBD
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **interpretation**	A categorical assessment of an observation value. For example, high, low, normal.	0..*	CodeableConcept	observation/**interpretationCode**	TBD - is this right? interpretationCode/originalText or interpretationCode/@displayName **SHALL** be included. Observation Interpretation Codes (extensible)
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **note**	Comments about the observation or the results.	0..*	Annotation	observation/**tbd**	TBD

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **bodySite**	Indicates the site on the subject's body where the observation was made (i.e. the target site).	0..1	CodeableConcept	observation/**targetSiteCode**	TBD targetSiteCode/originalText or targetSiteCode/@displayName **SHALL** be included.
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **method**	Indicates the mechanism used to perform the observation.	0..1	CodeableConcept	observation/**methodCode**	TBD methodCode/originalText or methodCode/@displayName **SHALL** be included.
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **specimen**	The specimen that was used when this observation was made.	0..1	Reference(AU Base Specimen)	See: ???	TBD specimen **SHALL** conform to the template defined in ???.
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **referenceRange**	Guidance on how to interpret the value by comparison to a normal or recommended range. Multiple reference ranges are interpreted as an "OR". In other words, to represent two distinct target populations, two referenceRange elements would be used.	0..*	BackboneElement	observation/**referenceRange[ref]**	TBD
				observation/referenceRange[ref]/**observationRange**	
				observation/referenceRange[ref]/observationRange/**@classCode="OBS"**	
				observation/referenceRange[ref]/observationRange/**@moodCode="EVN"**	
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > referenceRange > **low**	The value of the low bound of the reference range. The low bound of the reference range endpoint is inclusive of the value (e.g. reference range is >=5 - <=9). If the low bound is omitted, it is assumed to be meaningless (e.g. reference range is <=2.3).	0..1	SimpleQuantity	observation/referenceRange[ref]/observationRange/**value/high/@value**	TBD The value xsi:type **SHALL** be instantiated as "IVL_PQ". If both the low element and high element are instantiated they **SHOULD NOT** be represented as separate value elements.
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > referenceRange > **high**	The value of the high bound of the reference range. The high bound of the reference range endpoint is inclusive of the value (e.g. reference range is >=5 - <=9). If the high bound is omitted, it is assumed to be meaningless (e.g. reference range is >= 2.3).	0..1	SimpleQuantity	observation/referenceRange[ref]/observationRange/**value/high/@value**	TBD The value xsi:type **SHALL** be instantiated as "IVL_PQ". If both the low element and high element are instantiated they **SHOULD NOT** be represented as separate value elements.
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > referenceRange > **type**	Codes to indicate the what part of the targeted reference population it applies to. For example, the normal or therapeutic range.	0..1	CodeableConcept	observation/referenceRange[ref]/observationRange/**interpretationCode**	TBD In CDA, type and appliesTo are represented by referenceRange/observationRange/interpretationCode. interpretationCode/originalText or interpretationCode/@displayName **SHALL** be included. Observation Reference Range Meaning Codes (extensible)

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > referenceRange > **appliesTo**	Codes to indicate the target population this reference range applies to. For example, a reference range may be based on the normal population or a particular sex or race. Multiple appliesTo are interpreted as an "AND" of the target populations. For example, to represent a target population of African American females, both a code of female and a code for African American would be used.	0..*	CodeableConcept	observation/referenceRange[ref]/observationRange/**interpretationCode**	TBD In CDA, type and appliesTo are represented by referenceRange/observationRange/interpretationCode. interpretationCode/originalText or interpretationCode/@displayName **SHALL** be included. Observation Reference Range Applies To Codes (extensible)
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > referenceRange > **age**	The age at which this reference range is applicable. This is a neonatal age (e.g. number of weeks at term) if the meaning says so.	0..1	Range	observation/referenceRange[ref]/**???**	TBD
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > referenceRange > **text**	Text based reference range in an observation which may be used when a quantitative range is not appropriate for an observation. An example would be a reference value of "Negative" or a list or table of "normals".	0..1	string	observation/referenceRange[ref]/observationRange/**See: instantiation options**	TBD **instantiation choices:** The text referenceRange **SHALL** be instantiated as either a string (value/@xsi:type="ST") or as reference to narrative text (value/text/reference/@value)
Observation (A specialist or other diagnostic (not pathology or imaging) investigation) > **hasMember**	This observation is a group observation (e.g. a battery, a panel of tests, a set of vital sign measurements) that includes the target as a member of the group.	0..*	Reference(Atomic Other Diagnostic Observation)	observation/**tbd**	TBD tbd **SHALL** conform to the template defined in observation (Atomic Other Diagnostic Observation).

8 Common patterns

This chapter contains conformance requirements on CDA schema elements. These conformance rules apply across multiple templates, forming 'common patterns'.

8.1 Entity Identifier

See ??? for an explanation of mapping table presentation.

CDA mapping

Common pattern	CDA schema element	CDA element description	CDA card	CDA constraints and comments
Entity Identifier	**ext:asEntityIdentifier**	A number or code issued for the purpose of identifying a participant within a healthcare context.	Cardinality comes from linking element	
	ext:asEntityIdentifier/**@classCode="IDENT"**		1..1	
	ext:asEntityIdentifier/**ext:id**		1..1	
	ext:asEntityIdentifier/ext:id/**@root**		1..1	root **SHALL** be an OID and **SHALL NOT** be a UUID.
	ext:asEntityIdentifier/ext:id/**@extension**		0..1	
	ext:asEntityIdentifier/ext:id/**@assigningAuthorityName**		0..1	A name for the namespace represented in the root that is populated with the issuer, or identifier type, or a concatenation of both as appropriate. This is used for human-readable, not machine processing, purposes. assigningAuthorityName **SHOULD** be instantiated.
	ext:asEntityIdentifier/**ext:code**		0..1	
	ext:asEntityIdentifier/**ext:assigningGeographicArea**		0..1	
	ext:asEntityIdentifier/ext:assigningGeographicArea/**@classCode="PLC"**		1..1	
	ext:asEntityIdentifier/ext:assigningGeographicArea/**ext:name**		0..1	The range and extent that the identifier applies to the object with which it is associated that is populated directly from the geographic area. This is used for human-readable, not machine processing, purposes. ext:name **SHOULD** be instantiated. Healthcare Identifier Geographic Area (preferred) This CDA schema element is expected to be populated with the display, e.g. "National Identifier".

Examples

Example 8.1. Entity Identifier - Australian IHI

```
<!-- Australian IHI -->
<xs:asEntityIdentifier classCode="IDENT">
 <xs:id root="1.2.36.1.2001.1003.0.8003608833357361" assigningAuthorityName="IHI" />
 <xs:assigningGeographicArea classCode="PLC">
      <xs:name>National Identifier</xs:name>
   </xs:assigningGeographicArea>
</xs:asEntityIdentifier>
```

Example 8.2. Entity Identifier - Local Medical Record Number

```
<!-- Local Medical Record Number -->
<xs:asEntityIdentifier classCode="IDENT">
 <xs:id root="1.2.36.1.2001.1005.29.8003621566684455" extension="542181" assigningAuthorityName="Croydon GP Centre" />
   <xs:code code="MR" codeSystem="2.16.840.1.113883.12.203" codeSystemName="Identifier Type (HL7)" />
</xs:asEntityIdentifier>
```

Example 8.3. Entity Identifier - Australian HPI-I

```
<!-- Australian HPI-I -->
<xs:asEntityIdentifier classCode="IDENT">
 <xs:id assigningAuthorityName="HPI-I" root="1.2.36.1.2001.1003.0.8003610537409456"/>
 <xs:assigningGeographicArea classCode="PLC">
  <xs:name>National Identifier</xs:name>
 </xs:assigningGeographicArea>
</xs:asEntityIdentifier>
```

Example 8.4. Entity Identifier - Australian HPI-O

```
<!-- Australian HPI-O -->
<xs:asEntityIdentifier classCode="IDENT">
   <xs:id assigningAuthorityName="HPI-O" root="1.2.36.1.2001.1003.0.8003621566684455" />
   <xs:assigningGeographicArea classCode="PLC">
      <xs:name>National Identifier</xs:name>
   </xs:assigningGeographicArea>
</xs:asEntityIdentifier>
```

8.2 Personal Relationship

See ??? for an explanation of mapping table presentation.

CDA mapping

Common pattern	CDA schema element	CDA element description	CDA card	CDA constraints and comments
Personal Relationship	**ext:personalRelationship**	The personal relationship of a participant to a patient. A personal relationship is not to be instantiated if the participant is a practitioner.	Cardinality comes from linking element	
	ext:personalRelationship/**@classCode="PRS"**		0..1	
	ext:personalRelationship/**ext:id**		0..1	
	ext:personalRelationship/**ext:code**		1..1	
	ext:personalRelationship/**ext:statusCode**		0..1	v3 Code System RoleStatus (required)
	ext:personalRelationship/**ext:effectiveTime**		0..1	
	ext:personalRelationship/**ext:asPersonalRelationship**		1..1	
	ext:personalRelationship/ext:asPersonalRelationship/**@classCode="PSN"**		0..1	
	ext:personalRelationship/ext:asPersonalRelationship/**@determinerCode="INSTANCE"**		0..1	
	ext:personalRelationship/ext:asPersonalRelationship/**id**		1..1	This id **SHALL** hold the same value as patientRole/id.
	ext:personalRelationship/ext:asPersonalRelationship/**administrativeGenderCode/@nullFlavor="NA"**		1..1	Included for CDA conformance only.

Examples

Example 8.5. Personal Relationship - author related person

```
<!-- recordTarget (Patient) -->
<recordTarget>
   <patientRole>
      <!-- patient identifier-->
      <id extension="100543" root="2.16.840.1.113883.19.1.2.3.4"/>
   </patientRole>
</recordTarget>

<!-- author (RelatedPerson) -->
<author>
   <time value="200911031647+1000"/>
   <assignedAuthor>
      <!-- author identifier-->
      <id root="86d729b8-72d2-460a-a64c-489a51607450"/>
      <assignedPerson>
         <!-- personal relationship -->
         <ext:personalRelationship>
            <!--relationship-->
            <ext:code code="SIGOTHR" codeSystem="2.16.840.1.113883.5.111" codeSystemName="v3 Code System RoleCode" displayName="significant other" />
            <!--patient-->
            <ext:asPersonalRelationship>
               <!-- patient identifier-->
               <id extension="100543" root="2.16.840.1.113883.19.1.2.3.4"/>
               <administrativeGenderCode nullFlavor="NA" />
            </ext:asPersonalRelationship>
         </ext:personalRelationship>
      </assignedPerson>
   </assignedAuthor>
</author>
```

Example 8.6. Personal Relationship - performer related person

```
<!-- recordTarget (Patient) -->
<recordTarget>
   <patientRole>
      <!-- patient identifier-->
      <id extension="100543" root="2.16.840.1.113883.19.1.2.3.4"/>
   </patientRole>
</recordTarget>

<!-- participant performer (RelatedPerson) -->
<participant typeCode="PRF">
   <associatedEntity classCode="ASSIGNED">
      <!--participant performer identifier-->
      <id root="f3351b5c-8a6c-437c-a55c-a6c121873456"/>
      <!-- personal relationship -->
      <associatedPerson>
         <ext:personalRelationship>
            <!--relationship-->
            <ext:code code="FAMMEMB" codeSystem="2.16.840.1.113883.5.111" codeSystemName="v3 Code System RoleCode" displayName="Family Member" />
```

```
            <!--patient-->
            <ext:asPersonalRelationship>
               <!-- patient identifier-->
               <id extension="100543" root="2.16.840.1.113883.19.1.2.3.4"/>
               <administrativeGenderCode nullFlavor="NA" />
            </ext:asPersonalRelationship>
         </ext:personalRelationship>
      </associatedPerson>
   </associatedEntity>
</participant>
```

8.3 Language Communication

See ??? for an explanation of mapping table presentation.

CDA mapping

Common pattern	CDA schema element	CDA element description	CDA card	CDA constraints and comments
Language Communication	**ext:languageCommunication**	A language communication capability of an individual.	Cardinality comes from linking element	
	ext:languageCommunication/**languageCode**		1..1	This CDA schema element is of type CodedSimpleValue (CS). All Languages (required) Common Languages in Australia (extensible)
	ext:languageCommunication/**modeCode**		0..1	v3 Code System LanguageAbilityMode (preferred)
	ext:languageCommunication/**proficiencyLevelCode**		0..1	v3 Code System LanguageAbilityProficiency (preferred)
	ext:languageCommunication/**preferenceInd**		0..1	This CDA schema element is of type Boolean (BL).

Examples

Example 8.7. Language Communication - English is preferred

```
<!-- Language Communication -->
<ext:languageCommunication>
 <languageCode code="en"/>
 <preferenceInd value="true"/>
</ext:languageCommunication>
```

Example 8.8. Language Communication - Pitjantjatjara is preferred

```
<!-- Language Communication -->
<ext:languageCommunication>
 <languageCode code="pjt"/>
</ext:languageCommunication>
```

Example 8.9. Language Communication - German is spoken

```
<!-- Language Communication -->
<ext:languageCommunication>
 <languageCode code="de"/>
</ext:languageCommunication>
```

Appendix A. Complex data type mappings to CDA (R2)

This informative appendix provides some guidance on how *FHIR R4 [HL7FHIR4]* complex data types referred to in the body of this specification can map to CDA (R2). The material provided are recommendations and do not represent conformance requirements.

A.1 ContactPoint

This informative appendix provides some guidance on how the complex data type ContactPoint can map to CDA (R2).

The mapping table below provides a set of preferred mappings to the TelecommunicationAddress (TEL) data type [HL7V3] and do not represent conformance requirements. See ??? for an explanation of mapping table presentation.

CDA mapping

Logical element	Logical element description	Logical card	Logical type	CDA schema element	CDA constraints and comments
ContactPoint	Details for all kinds of technology mediated contact points for a person or organization, including telephone, email, etc.	Cardinality comes from linking element	Element	**//telecom**	In CDA, ContactPoint value and system are represented as parts of telecom/@value. If ContactPoint value is present, ContactPoint system **SHALL** be present.
ContactPoint > **contact-purpose**	Indicates a purpose for which the contact can be reached.	0..1	CodeableConcept	TBD	TBD
ContactPoint > **system**	Telecommunications form for contact point - what communications system is required to make use of the contact.	0..1	code	//telecom/**@value**	The value attribute is composed of two parts, following the pattern "system:value". This logical element maps to the first part of this pattern: "**system**:value", e.g. "tel:phone number", "mailto:email address", "http:URL", etc. HL7 URLScheme (required)
ContactPoint > **value**	The actual contact point details, in a form that is meaningful to the designated communication system (i.e. phone number or email address).	0..1	string	//telecom/**@value**	The value attribute is composed of two parts, following the pattern "system:value". This logical element maps to the second part of this pattern: "system:**value**", e.g. "tel:phone number", "mailto:email address", "http:URL", etc.
ContactPoint > **use**	Identifies the purpose for the contact point.	0..1	code	//telecom/**@use**	HL7 TelecommunicationAddressUse (required)[1]
ContactPoint > **rank**	Specifies a preferred order in which to use a set of contacts. ContactPoints with lower rank values are more preferred than those with higher rank values.	0..1	positiveInt	n/a	This logical element has no mapping to CDA.
ContactPoint > **period**	Time period when the contact point was/is in use.	0..1	Period	//telecom/**usablePeriod**	

[1]This value set differs from the value set bound to use in ContactPoint due to constraints on @use in the HL7 CDA Schema. The concept map v3 map for ContactPointUse provides a mapping between the two value sets.

Examples

Example A.1. ContactPoint - home telephone with period

```
<!-- ContactPoint where system=phone, value=+1-(03)5550-1212, use=home -->
<telecom value="tel:+1-(03)5550-1212" use="H">
    <!-- ContactPoint.period -->
    <useablePeriod xsi:type="IVL_TS">
        <low value="01012001" />
        <high value="01012012" />
    </useablePeriod>
</telecom>
```

Example A.2. ContactPoint - home telephone

```
<!-- ContactPoint where system=phone, value=0755501234, use=home -->
<telecom use="H" value="tel:0755501234" />
```

Example A.3. ContactPoint - work email

```
<!-- ContactPoint where system=email, value=sfranklin@amail.example.com, use=work -->
<telecom use="WP" value="mailto:sfranklin@amail.com.au" />
```

Example A.4. ContactPoint - emergency contact

```
<!-- ContactPoint where system=phone, value=+61491579760, use=emergency -->
<telecom value="tel:+61491579760" use="EC"/>
```

Appendix B. Examples

This implementation guide is intended to support multiple usage scenarios; some templates described within this implementation guide are reused across usage scenarios and other implementation guides.

This informative appendix provides examples that conform to the CDA templates defined in this implementation guide to support implementation by demonstrating one or more supported usage scenarios.

Example	Context	Usage Scenario(s)
Cardiology echocardiogram	My Health Record system	Simple attachment

A corresponding set of FHIR Release 4 examples, conforming to the FHIR profiles used as logical models for this CDA implementation guide, are available in the *Diagnostic Report FHIR Implementation Guide [DH2021a]*.

B.1 Cardiology echocardiogram

This informative appendix provides an example CDA instance that conforms to the requirements of this implementation guide.

Example B.1. Diagnostic Report example 1

```
<!-- This example is illustrative only. This fragment cannot be treated as clinically valid.
While every effort has been taken to ensure that the examples are consistent with the message specification, where
there are conflicts with the written message specification or schema, the specification or schema will take precedence. -->

<ClinicalDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:hl7-org:v3 ../../../library/schema_au_dev/CDA-AU-V1_0.xsd"
  xmlns="urn:hl7-org:v3" xmlns:ext="http://ns.electronichealth.net.au/Ci/Cda/Extensions/3.0"
  xmlns:ex="urn:hl7-org/v3-example" classCode="DOCCLIN" moodCode="EVN">
  <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
  <templateId root="1.2.36.1.2001.1001.102.101.100107"/>
  <templateId root="1.2.36.1.2001.1001.100.149"/>
  <templateId root="1.2.36.1.2001.1001.102.101.100108"/>
  <id root="2.25.136200746941012050267541510145814858140"/>
  <code code="47045-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
    displayName="Study report">
    <originalText>Echocardiogram</originalText>
  </code>
  <title>Echocardiogram</title>
  <effectiveTime value="20150318154902+1000"/>
  <confidentialityCode nullFlavor="NA"/>
  <languageCode code="en-AU"/>
  <setId root="004bb033-b948-4f4c-b5bf-a8dbd7d8dd40"/>
  <versionNumber value="1"/>
  <ext:completionCode code="F" codeSystem="1.2.36.1.2001.1001.101.104.20104"
    codeSystemName="NCTIS Document Status Values" displayName="Final"/>

  ...

  <!-- Diagnostic Report Requester as Identified Organization -->
  <participant typeCode="REF">
    <templateId root="1.2.36.1.2001.1001.102.101.100103"/>
    <associatedEntity classCode="ASSIGNED">
      <id root="1b3b2d1f-543c-42a4-b845-d374d891302c"/>
      <addr>
        <streetAddressLine>9999 Healthcare Street</streetAddressLine>
        <city>North Pole</city>
        <state>AK</state>
        <postalCode>97857</postalCode>
        <country>US</country>
      </addr>
      <telecom use="WP" value="tel:0270102222"/>
      <scopingOrganization>
        <templateId root="1.2.36.1.2001.1001.102.101.100087"/>
        <name use="ORGE">Ward 5C</name>
        <name use="ORGL">5C</name>
        <standardIndustryClassCode code="418649002" codeSystem="2.16.840.1.113883.6.96"
          displayName="Cardiac stepdown unit"/>
        <asOrganizationPartOf>
          <id root="4f5726e6-94de-45c0-b36b-0a2ee4ae3ea7"/>
          <wholeOrganization>
            <id root="356304da-c60a-430e-8a31-ed302eaf2073"/>
            <name>Goodhealth Hospital</name>
            <telecom use="WP" value="tel:0270104444"/>
            <addr>
              <streetAddressLine>9999 Healthcare Street</streetAddressLine>
              <city>North Pole</city>
              <state>AK</state>
              <postalCode>97857</postalCode>
              <country>US</country>
            </addr>
            <standardIndustryClassCode code="309895006" codeSystem="2.16.840.1.113883.6.96"
              displayName="Private hospital"/>
            <ext:asEntityIdentifier classCode="IDENT">
              <ext:id root="1.2.36.1.2001.1003.0.8003621231166541" assigningAuthorityName="HPI-O"/>
              <ext:assigningGeographicArea classCode="PLC">
                <ext:name>National Identifier</ext:name>
              </ext:assigningGeographicArea>
            </ext:asEntityIdentifier>
          </wholeOrganization>
        </asOrganizationPartOf>
        <ext:asEntityIdentifier classCode="IDENT">
          <ext:id root="1.2.36.1.2001.1003.0.8003621231166540" assigningAuthorityName="HPI-O"/>
          <ext:assigningGeographicArea classCode="PLC">
            <ext:name>National Identifier</ext:name>
          </ext:assigningGeographicArea>
        </ext:asEntityIdentifier>
      </scopingOrganization>
    </associatedEntity>
  </participant>

  <!-- Organization contact for the Identified Organization -->
  <participant typeCode="IND">
    <templateId root="1.2.36.1.2001.1001.102.101.100035"/>
    <associatedEntity classCode="CON">
      <id root="1b3b2d1f-543c-42a4-b845-d374d891302c"/>
      <code code="after-hours" codeSystem="2.16.840.1.113883.2.3.4.1.2.19" displayName="After Hours"/>
```

```
      <telecom use="WP" value="tel:0270103333"/>
      <associatedPerson>
        <name use="L">
          <family>Smith</family>
          <given>Bob</given>
        </name>
      </associatedPerson>
      <scopingOrganization>
        <id root="1b3b2d1f-543c-42a4-b845-d374d891302c"/>
      </scopingOrganization>
    </associatedEntity>
  </participant>

  <!-- Diagnostic Report Request -->
  <inFulfillmentOf typeCode="FLFS">
    <order classCode="ACT" moodCode="RQO">
      <templateId root="1.2.36.1.2001.1001.102.101.100102"/>
      <id root="2.16.840.1.113883.6.96" extension="1298989898"/>
      <code code="433236007" displayName="Transthoracic echocardiography"
        codeSystem="2.16.840.1.113883.6.96"/>
    </order>
  </inFulfillmentOf>

  ...

  <!-- Composition section (Diagnostic Investigations) -->
  <component>
    <structuredBody>
      <component>
          <section>
              <templateId root="1.2.36.1.2001.1001.102.101.100109"/>
              <code code="30954-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
                     displayName="Relevant diagnostic tests/laboratory data Narrative"/>
              <title>Echocardiography Report</title>
              <text mediaType="text/x-hl7-text+xml">
                  <paragraph>
                      <caption>Echocardiography Report Summary:</caption>
                  </paragraph>
                  <list listType="ordered">
                      <item>Normal left ventricular size. LV vol 119 ml.</item>
                      <item>Normal overall left ventricular systolic function. EF = 61%.</item>
                      <item>There were no resting regional wall motion abnormalities detected.</item>
                      <item>Normal GLS (Global Longitudinal Strain) -21 %.</item>
                      <item>Normal right ventricular size and systolic function.</item>
                      <item>Mildly dilated Left atrium. 21 cm2.</item>
                      <item>Mild dilatation of the aortic root (43mm).</item>
                      <item>Mild aortic valve sclerosis without stenosis.</item>
                      <item>Trivial (0-1/4) mitral valve regurgitation.</item>
                      <item>Trivial (0-1/4) tricuspid regurgitation.</item>
                      <item>Normal pulmonary artery systolic pressure. RVSP = 23 mmHg.</item>
                      <item>The interatrial septum appears intact.</item>
                      <item>Normal pericardium.</item>
                      <item>Patient was in sinus bradycardia at a rate of 54 bpm.</item>
                  </list>
              </text>
              <!-- entry details to be completed-->
              <!--<entry/>-->
          </section>
      </component>
    </structuredBody>
  </component>

</ClinicalDocument>
```

Appendix C. Mapping from requirements

This implementation guide is intended to support multiple usage scenarios; some templates described within this implementation guide are reused across usage scenarios and other implementation guides.

This informative appendix provides a mapping from the requirements of each end-product clinical specification to a logical element (profiled FHIR resource) and its corresponding mapping to a CDA schema element (in a CDA template). At the time of publication of this implementation guide the only end-product clinical specification supported is Diagnostic Report (DR) which is a sub-type of the document-level usage scenario Other Diagnostic Report.

The mapping from requirements tables in this appendix demonstrates the logical decomposition of each requirement to the lowest possible element in the applicable logical model and CDA template.

Legend for mapping from requirements

Requirement	Req No.	Logical element	CDA schema element	Additional notes
The heading text of the requirement as taken from the requirements specification.	The requirement number as taken from the requirement specification.	Either the name of the lowest element in a profiled FHIR resource that addresses the requirement or n/a where the requirement has been deemed not applicable. If the lowest possible decomposition is to the resource then only the resource name (e.g. Patient) is present. If the lowest possible decomposition is to one or more child elements of a FHIR resource then a ">" notation is used to indicate the hierarchical relationship. For example Patient > communication > language indicates the requirement maps to the language element, that is a child of the communication element, in the Patient FHIR resource. Where a requirement is addressed by multiple elements, the elements are presented in order of appearance in the profiled FHIR resource.	Either the path to the lowest level CDA schema element in a template that addresses the requirement or n/a where the requirement has been deemed not applicable to a CDA template. The syntax for this uses an ??? and starts as the root element ClinicalDocument e.g. ClinicalDocument/recordTarget/patientRole/patient/name Where an element is addressed by multiple CDA schema element paths, each path is presented.	Additional notes are provided where a gap between a requirement, or parts of a requirement, and the templates is identified. Where a requirement is fully addressed by the mapped elements then no entry in this column is expected.

C.1 Mapping from DR information requirements

The table below provides mapping from the requirements in *Diagnostic Report Information Requirements [DH2021b]* to the corresponding supported element in the Composition (Other Diagnostic Report) model and their corresponding CDA schema element(s) in the ??? template from the root `ClinicalDocument`.

See C.1 Legend for mapping from requirements for an explanation of requirements mapping table presentation.

Requirement	Req No.	Logical element	CDA schema element	Additional notes
TBD	TBD	TBD	TBD	

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