Australian Government
Australian Digital Health Agency

# Advance Care Information

## Structured Content Specification

21 December 2017 v1.0

Approved for external use

Document ID: DH-1531:2017

**Australian Digital Health Agency** ABN 84 425 496 912, Level 25, 56 Pitt Street, Sydney, NSW 2000
Telephone 1300 901 001 or email help@digitalhealth.gov.au
www.digitalhealth.gov.au



**Disclaimer**

The Australian Digital Health Agency ("the Agency") makes the information and other material ("Information") in this document available in good faith but without any representation or warranty as to its accuracy or completeness. The Agency cannot accept any responsibility for the consequences of any use of the Information. As the Information is of a general nature only, it is up to any person using or relying on the Information to ensure that it is accurate, complete and suitable for the circumstances of its use.

**Document control**

This document is maintained in electronic form and is uncontrolled in printed form. It is the responsibility of the user to verify that this copy is the latest revision.

# Document Information

## Key Information

| | |
|---|---|
| **Owner** | Executive General Manager, Innovation and Development |
| **Contact for enquiries** | Australian Digital Health Agency Help Centre<br>t: 1300 901 001<br>e: help@digitalhealth.gov.au |

## Product Version History

| Product version | Date | Release comments |
|---|---|---|
| 1.0 | 21 Dec 2017 | Initial release. This specification is published to support the My Health Record advance care planning document (2016). |

## Related Documents

| Name | Version/Release Date |
|---|---|
| *Participation Data Specification* | Version 3.2, Issued 20 July 2011 |
| *Advance Care Information CDA Implementation Guide* | Version 1.0, Issued 21 December 2017 |
| *My Health Record Glossary* | Issued 2016 |
| *Data Types in NEHTA Specifications: A Profile of the ISO 21090 Specification* | Version 1.0, September 2010 |

*This page is intentionally left blank.*

# Acknowledgements

**Council of Australian Governments**

The Australian Digital Health Agency is jointly funded by the Australian Government and all state and territory governments.

**Regenstrief Institute (LOINC)**

This material contains content from LOINC™ (http://loinc.org). The LOINC table, LOINC codes, LOINC panels and forms file, and LOINC linguistic variants file are copyright © 1995-2015, Regenstrief Institute, Inc. and the Logical Observation Identifiers Names and Codes (LOINC) Committee and available at no cost under the license at https://loinc.org/-terms-of-use/. LOINC is a trademark of Regenstrief Institute, Inc., registered in the United States.

**IHTSDO (SNOMED CT)**

This material includes SNOMED Clinical Terms™ (SNOMED CT®) which is used by permission of the International Health Terminology Standards Development Organisation (IHTSDO). All rights reserved. SNOMED CT® was originally created by The College of American Pathologists.

"SNOMED" and "SNOMED CT" are registered trademarks of the IHTSDO, (http://www.ihtsdo.org/).

**HL7 International**

This document includes excerpts of HL7™ International standards and other HL7 International material. HL7 International is the publisher and holder of copyright in the excerpts. The publication, reproduction and use of such excerpts is governed by the HL7 IP Policy (see http://www.hl7.org/legal/ippolicy.cfm) and the HL7 International License Agreement. HL7 and CDA are trademarks of Health Level Seven International and are registered with the United States Patent and Trademark Office. FHIR is a registered trademark of Health Level Seven International.

*This page is intentionally left blank.*

# Table of Contents

*This page is intentionally left blank.*

# 1 Introduction

This document is a structured content specification (SCS) for advance care information documents that are added to a person's digital health record in the My Health Record system. An advance care information document is a container for a copy of an advance care planning document. An advance care planning document is a statement of a person's decisions about their future care, should they become incapable of participating in medical treatment decisions.

Appendix C, *Specification Guide for Use* explains the data type constraints applied to data elements defined in this SCS. It also provides important information on how to read and use the SCS and is therefore an essential compendium for a better understanding of the SCS.

We value your questions and comments about this document. Please direct your questions or feedback to *help@digitalhealth.gov.au*.

## 1.1 Document Purpose

This document describes the structured content of advance care information documents that are added to the My Health Record system.

The content within this document provides reviewers (software development teams, architects, designers, clinicians and informatics researchers) with the necessary information (or references to information held outside this document) to evaluate and assess the clinical suitability of the specification.

It is also a key input to the *Advance Care Information CDA Implementation Guide [DH2017f]*, which describes how to implement Agency-compliant advance care information documents using the *HL7 Clinical Document Architecture [HL7CDAR2]*.

## 1.2 Intended Audience

This document is aimed at software development teams, architects, designers, clinicians and informatics researchers who are responsible for the delivery of clinical applications, infrastructure components and messaging interfaces, and also for those who wish to evaluate the clinical suitability of the Agency-endorsed specifications.

## 1.3 Document Scope

This document specifies the essential data groups, data elements, and the constraints that should be applied to them when creating an advance care information document for inclusion in the My Health Record system.

Other uses of advance care information, such as the exchange of information between an individual (or their representative) and other related parties (such as general practitioners and specialists), have not been considered for this design.

This is not a guide to the implementation of any specific messaging standard.

This document is not to be used as a guide to presentation (or rendering) of the data. It contains no information as to how the data described by it should be displayed and no such guidance should be inferred from this document.

## 1.4 Known Issues

Known issues with this document are described in Appendix B, *Known Issues*.

*This page is intentionally left blank.*

# 2 Advance Care Information Structured Document

## 2.1 Use

Used to hold a copy of an original document from a clinical health repository.

# 2.2 ADVANCE CARE INFORMATION

## Identification

| | |
|---|---|
| **Label** | ADVANCE CARE INFORMATION |
| **Metadata Type** | Structured Document |
| **Identifier** | SD-16975 |
| **OID** | 1.2.36.1.2001.1001.101.100.16975 |

## Definition

| | |
|---|---|
| **Definition** | Container for a copy of a statement of a person's decisions about their future care, should they become incapable of participating in medical treatment decisions. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Scope** | This is not an original advance care document; it contains a copy of an original document. |
| **Scope Source** | Australian Digital Health Agency |

# Data Hierarchy

### Note

Items below whose text is lighter (mid-blue and mid-grey) are technical identifiers whose purpose is to facilitate interoperability, sharing of data and secondary use. Typically, such identifiers will be generated internally by systems and not displayed to users since they rarely have clinical significance.

Items below with a grey background are data components that are included in the relevant detailed clinical model specification, but whose use is discouraged in this particular scenario.

Items below with a clear background are data components whose use is encouraged in this particular scenario.

| | | | |
|---|---|---|---|
|  | ADVANCE CARE INFORMATION | | |
| CONTEXT | | | |
| |  | SUBJECT OF CARE | 1..1 |
| |  | DOCUMENT AUTHOR | 1..1 |
| |  | ENCOUNTER | 0..0 |
| |  | Document Instance Identifier | 1..1 |
| |  | RELATED INFORMATION | 0..0 |
| |  | Document Type | 1..1 |

| | | | | |
|---|---|---|---|---|
| | | Document Title | | 1..1 |
| CONTENT | | | | |
| | | ADVANCE CARE INFORMATION SECTION | | 1..1 |
| | | Advance Care Information Section Instance Identifier | | 0..1 |
| | | RELATED DOCUMENT | | 1..1 |
| | | | Link Nature | 1..1 |
| | | | Link Role | 0..0 |
| | | | Document Target | 1..1 |
| | | | DOCUMENT DETAILS | 1..1 |
| | | | DateTime Health Event Ended | 0..0 |
| | | | Document Type | 1..1 |
| | | | DOCUMENT AUTHOR | 1..1 |
| | | | DOCUMENT CUSTODIAN | 0..0 |
| | | | Document Title | 0..0 |
| | | | ADDITIONAL DOCUMENT DETAIL | 0..0 |
| | | | Document Summary | 0..0 |
| | | | Effective Period | 0..0 |
| | | | Document Identifier | 0..1 |
| | | | Document Status | 0..0 |
| | | Section Type | | 1..1 |

# 2.3 SUBJECT OF CARE

## Identification

| | |
|---|---|
| **Label** | SUBJECT OF CARE |
| **Metadata Type** | Data Group |
| **Identifier** | DG-10296 |
| **OID** | 1.2.36.1.2001.1001.101.102.10296 |

## Definition

| | |
|---|---|
| **Definition** | Person who receives healthcare services. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | Patient<br>Individual |
| **Scope** | The person who is the focus of the document. |
| **Scope Source** | Australian Digital Health Agency |

## Usage

| | |
|---|---|
| **Conditions of Use** | This is a reuse of the *PARTICIPATION* `data group`, which is described in *Participation Data Specification [NEHT2011v]*. Further constraints on this data group that apply to this reuse of it are listed below.<br><br>Obligation and occurrence constraints:<br><br>• Participation Period is **PROHIBITED**.<br><br>• LOCATION OF PARTICIPATION is **PROHIBITED**.<br><br>• Entity Identifier is **ESSENTIAL**.<br><br>• ADDRESS is **ESSENTIAL**.<br><br>• Relationship to Subject of Care is **PROHIBITED**.<br><br>• EMPLOYMENT DETAIL is **PROHIBITED**.<br><br>• DEMOGRAPHIC DATA is **ESSENTIAL**.<br><br>• Sex is **ESSENTIAL**.<br><br>• DATE OF BIRTH DETAIL is **ESSENTIAL**.<br><br>• Indigenous Status is **ESSENTIAL**.<br><br>• Qualifications is **PROHIBITED**.<br><br>Other constraints:<br><br>• Participation Type **SHALL** have an implementation-specific value equivalent to “Subject of Care”.<br><br>• Role **SHALL** have an implementation-specific value equivalent to “Patient”. |

| | |
|---|---|
| | • The value of one Entity Identifier **SHALL** be an Australian IHI.<br>• AUSTRALIAN OR INTERNATIONAL ADDRESS **SHALL** be instantiated as an AUSTRALIAN ADDRESS.<br>• PERSON OR ORGANISATION OR DEVICE **SHALL** be instantiated as a PERSON.<br>Terms used in obligation and occurrence constraints are explained in Appendix C, *Specification Guide for Use*. |
| **Conditions of Use Source** | Australian Digital Health Agency |

# Relationships

**Parents**

| Data Type | Name | **Occurrences** (child within parent) |
|---|---|---|
|  | ADVANCE CARE INFORMATION | 1..1 |

# 2.4 DOCUMENT AUTHOR

## Identification

| | |
|---|---|
| **Label** | DOCUMENT AUTHOR |
| **Metadata Type** | Data Group |
| **Identifier** | DG-10296 |
| **OID** | 1.2.36.1.2001.1001.101.102.10296 |

## Definition

| | |
|---|---|
| **Definition** | Composer of the document. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | Author |
| **Notes** | The date, or date and time, that the authoring of the document was completed is recorded in the *Participation Period* of the *Document Author*. |

## Usage

| | |
|---|---|
| **Conditions of Use** | This is a reuse of the *PARTICIPATION* `data group`, which is described in *Participation Data Specification [NEHT2011v]*. Further constraints on this data group that apply to this reuse of it are listed below.<br><br>**DOCUMENT AUTHOR as a PERSON - Healthcare Provider**<br><br>Additional obligation and occurrence constraints when the author is a healthcare provider:<br><br>• Participation Period is **ESSENTIAL**.<br>• LOCATION OF PARTICIPATION is **PROHIBITED**.<br>• Entity Identifier is **ESSENTIAL**.<br>• ELECTRONIC COMMUNICATION DETAIL is **ESSENTIAL**.<br>• Relationship to Subject of Care is **PROHIBITED**.<br>• EMPLOYMENT DETAIL is **ESSENTIAL**.<br>• EMPLOYER ORGANISATION is **ESSENTIAL**.<br>• EMPLOYER ORGANISATION.Entity Identifier is **ESSENTIAL**.<br>• DEMOGRAPHIC DATA is **PROHIBITED**.<br><br>Other constraints:<br><br>• Participation Type **SHALL** have an implementation-specific value equivalent to “Document Author”.<br>• Role **SHOULD** have a value chosen from *1220.0 - ANZSCO - Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1 [ABS2009]*. However, if a suitable value in this set cannot be found, then any code set that is both registered with HL7 and is publicly available **MAY** be used. |

| | |
|---|---|
| | • The value of one Entity Identifier **SHALL** be an Australian HPI-I.<br>• The value of ADDRESS.Address Purpose SHALL be “B” (Business).<br>• The value of ELECTRONIC COMMUNICATION DETAIL.Electronic Communication Usage Code SHALL be “B” (Business).<br>• The value of one EMPLOYER ORGANISATION.Entity Identifier **SHALL** be an Australian HPI-O.<br>• PERSON OR ORGANISATION OR DEVICE **SHALL** be instantiated as a PERSON.<br>**DOCUMENT AUTHOR as a PERSON - Not a Healthcare Provider**<br>Additional obligation and occurrence constraints when the author is not a healthcare provider:<br>• Participation Period is **ESSENTIAL**.<br>• LOCATION OF PARTICIPATION is **PROHIBITED**.<br>• Entity Identifier is **ESSENTIAL**.<br>• Relationship to Subject of Care is **PROHIBITED**.<br>• EMPLOYMENT DETAIL is **PROHIBITED**.<br>• DEMOGRAPHIC DATA is **PROHIBITED**.<br>• ENTITLEMENT is **PROHIBITED**.<br>• Qualifications is **PROHIBITED**.<br>Other constraints:<br>• Participation Type **SHALL** have an implementation-specific value equivalent to “Document Author”.<br>• Role **SHALL** have an implementation-specific value equivalent to “Subject of Care” or “Subject of Care's Representative”.<br>• The value of one Entity Identifier **SHALL** be either an Australian IHI or a Care Agency Employee Identifier.<br>• PERSON OR ORGANISATION OR DEVICE **SHALL** be instantiated as a PERSON.<br>Terms used in obligation and occurrence constraints are explained in Appendix C, *Specification Guide for Use*. |
| **Conditions of Use Source** | Australian Digital Health Agency |

# Relationships

**Parents**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
|  | ADVANCE CARE INFORMATION | 1..1 |

# 2.5 Document Instance Identifier

## Identification

| | |
|---|---|
| **Label** | Document Instance Identifier |
| **Metadata Type** | Data Element |
| **Identifier** | DE-20101 |
| **OID** | 1.2.36.1.2001.1001.101.103.20101 |

## Definition

| | |
|---|---|
| **Definition** | Globally unique identifier for each instance of an *Advance Care Information* document. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Context** | A document can have multiple instances as it passes through its life cycle of creation, revisions before it is first sent, and revised versions thereafter. The value of this `data element` enables systems to identify all instances of a document uniquely, thus enabling efficient storage, query and audit trail of information about a subject of care. |
| **Context Source** | Australian Digital Health Agency |
| **Data Type** | UniqueIdentifier |

## Usage

| | |
|---|---|
| **Examples** | Please see Appendix C, *Specification Guide for Use* for examples and usage information for UniqueIdentifier. |
| **Exceptional Values** | Absent values are **PROHIBITED**.<br><br>Abnormal values are **PROHIBITED**. |

# Relationships

**Parents**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
|  | ADVANCE CARE INFORMATION | 1..1 |

# 2.6 Document Type

## Identification

| | |
|---|---|
| **Label** | Document Type |
| **Metadata Type** | Data Element |
| **Identifier** | DE-10335 |
| **OID** | 1.2.36.1.2001.1001.101.103.10335 |

## Definition

| | |
|---|---|
| **Definition** | Type of document. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Notes** | A document's type is identified by a unique identifier, not by a name. |
| **Data Type** | UniqueIdentifier |

## Usage

| | |
|---|---|
| **Conditions of Use** | The value of this item **SHALL** be either the default value or a semantically equivalent value from an appropriate code system, for example LOINC. |
| **Conditions of Use Source** | Australian Digital Health Agency |
| **Examples** | Please see Appendix C, *Specification Guide for Use* for examples and usage information for UniqueIdentifier. |
| **Default Value** | 1.2.36.1.2001.1001.101.100.16975 |
| **Exceptional Values** | Absent values are **PROHIBITED**.<br><br>Abnormal values are **PROHIBITED**. |

# Relationships

**Parents**

| Data Type | Name | **Occurrences** (child within parent) |
|---|---|---|
|  | ADVANCE CARE INFORMATION | 1..1 |

# 2.7 Document Title

## Identification

| | |
|---|---|
| **Label** | Document Title |
| **Metadata Type** | Data Element |
| **Identifier** | DE-16966 |
| **OID** | 1.2.36.1.2001.1001.101.103.16966 |

## Definition

| | |
|---|---|
| **Definition** | Display name of the document. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Data Type** | Text |

## Usage

| | |
|---|---|
| **Conditions of Use** | The value of this item **SHALL** be “Advance Care Planning Document”. |
| **Conditions of Use Source** | Australian Digital Health Agency |
| **Examples** | Please see Appendix C, *Specification Guide for Use* for examples and usage information for Text. |
| **Exceptional Values** | Absent values are **PROHIBITED**. |
| | Abnormal values are **PROHIBITED**. |

# Relationships

**Parents**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
|  | ADVANCE CARE INFORMATION | 1..1 |

# 2.8 ADVANCE CARE INFORMATION SECTION

## Identification

| | |
|---|---|
| **Label** | ADVANCE CARE INFORMATION SECTION |
| **Metadata Type** | Section |
| **Identifier** | S-16973 |
| **OID** | 1.2.36.1.2001.1001.101.101.16973 |

## Definition

| | |
|---|---|
| **Definition** | Section that contains a statement of a person's decisions about their future care, should they become incapable of participating in medical treatment decisions. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |

# Relationships

**Parents**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
|  | ADVANCE CARE INFORMATION | 1..1 |

**Children**

| Data Type | Name | Occurrences |
|---|---|---|
|  | Advance Care Information Section Instance Identifier | 0..1 |
|  | RELATED DOCUMENT | 1..1 |
|  | Section Type | 1..1 |

# 2.9 Advance Care Information Section Instance Identifier

## Identification

| | |
|---|---|
| **Label** | Advance Care Information Section Instance Identifier |
| **Metadata Type** | Data Element |
| **Identifier** | DE-16976 |
| **OID** | 1.2.36.1.2001.1001.101.103.16976 |

## Definition

| | |
|---|---|
| **Definition** | Globally unique identifier for each instance of *Advance Care Information Section* section. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Data Type** | UniqueIdentifier |

## Usage

| | |
|---|---|
| **Examples** | Please see Appendix C, *Specification Guide for Use* for examples and usage information for UniqueIdentifier. |
| **Exceptional Values** | Absent values are **PROHIBITED**.<br><br>Abnormal values are **PROHIBITED**. |

# Relationships

**Parents**

| Data Type | Name | **Occurrences** (child within parent) |
|---|---|---|
|  | ADVANCE CARE INFORMATION SECTION | 0..1 |

# 2.10 RELATED DOCUMENT

## Identification

| | |
|---|---|
| **Label** | RELATED DOCUMENT |
| **Metadata Type** | Data Group |
| **Identifier** | DG-16971 |
| **OID** | 1.2.36.1.2001.1001.101.102.16971 |

## Definition

| | |
|---|---|
| **Definition** | Information about a document of interest. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Scope** | The attached document concerning advance care planning decisions. |
| **Scope Source** | Australian Digital Health Agency |

# Relationships

**Parents**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
|  | ADVANCE CARE INFORMATION SECTION | 1..1 |

**Children**

| Data Type | Name | Occurrences |
|---|---|---|
|  | Link Nature | 1..1 |
|  | Link Role | 0..0 |
|  | Document Target | 1..1 |
|  | DOCUMENT DETAILS | 1..1 |

# 2.11 Link Nature

## Identification

| | |
|---|---|
| **Label** | Link Nature |
| **Metadata Type** | Data Element |
| **Identifier** | DE-16698 |
| **OID** | 1.2.36.1.2001.1001.101.103.16698 |

## Definition

| | |
|---|---|
| **Definition** | General semantic category of the relationship between this instance of this detailed clinical model (DCM), i.e. the source, and the target DCM instance or target document. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Notes** | This is one of two attributes that together communicate the semantics of the relationship between the source and target DCMs or document. This attribute is intended to be a coarse-grained category that can be used to enable interoperability between sender and receiver. |
| **Data Type** | CodedText |
| **Value Domain** | Link Nature Values |

## Usage

| | |
|---|---|
| **Conditions of Use** | The value of this item **SHALL** be “LINK-E0” (is a related documentation). |
| **Conditions of Use Source** | Australian Digital Health Agency |
| **Examples** | Please see Appendix C, *Specification Guide for Use* for examples and usage information for CodedText. |
| **Exceptional Values** | Absent values are **PROHIBITED**.<br><br>Abnormal values are **PROHIBITED**. |

# Relationships

**Parents**

| Data Type | Name | **Occurrences** (child within parent) |
|---|---|---|
|  | RELATED DOCUMENT | 1..1 |

# 2.12 Link Nature Values

## Identification

| | |
|---|---|
| **Label** | Link Nature Values |
| **Metadata Type** | Value Domain |
| **Identifier** | VD-16698 |
| **OID** | 1.2.36.1.2001.1001.101.104.16698 |
| **External Identifier** | LINK_NATURE |

## Definition

| | |
|---|---|
| **Definition** | Set of values for the general semantic category of the relationship between this instance of this DCM (i.e. the source) and the target DCM instance or target document. |
| **Definition Source** | Australian Digital Health Agency |

## Value Domain

| | | |
|---|---|---|
| **Source** | ISO 13606-3:2009 | |
| **Permissible Values** | The permissible values are those specified in Termlist LINK_NATURE in *ISO 13606-3:2009 Health informatics - Electronic health record communication - Part 3: Reference archetypes and term lists [ISO2009a]*. The values are listed here with brief descriptions. | |
| | LINK-A0, is related to | The most general category of Link. |
| | LINK-B0, is confirmed by or authorised by | The link target contains an instance of a DCM or document that is either a legal or authoritative basis for what is documented in the source DCM instance, or is a declaration of intent to provide (or not provide) requested care. |
| | LINK-C0, is related to the same problem or health issue | The target instance of a DCM or document describes health or healthcare that concerns the same clinical situation as the source DCM instance. |
| | LINK-D0, is related to the same care plan, act or episode | The source and the target instances of DCMs or documents both describe parts of the same care plan, act or episode. |
| | LINK-E0, is a related documentation | The target instance of a DCM or document is an alternative documentary form of the source DCM instance. For example, a re-expression of the same clinical information or supplementary explanatory information. |

# Relationships

**Parents**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
|  | Link Nature | 1..1 |

# 2.13 Document Target

## Identification

| | |
|---|---|
| **Label** | Document Target |
| **Metadata Type** | Data Element |
| **Identifier** | DE-16972 |
| **OID** | 1.2.36.1.2001.1001.101.103.16972 |

## Definition

| | |
|---|---|
| **Definition** | “Linked to” or identified document. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Notes** | The My Health Record system requires all *Advance Care Information* documents to use only PDF format files in *Document Target*. |
| **Data Type** | EncapsulatedData |

## Usage

| | |
|---|---|
| **Conditions of Use** | The attached document **SHALL** be one of the following formats:<br>• GIF (image/gif)<br>• JPEG (image/jpg, image/jpeg)<br>• PDF (application/pdf)<br>• PNG (image/png)<br>• TIFF (image/tif, image/tiff) |
| **Conditions of Use Source** | Australian Digital Health Agency |
| **Examples** | Please see Appendix C, *Specification Guide for Use* for examples and usage information for EncapsulatedData. |
| **Exceptional Values** | Absent values are **PROHIBITED**.<br>Abnormal values are **PROHIBITED**. |

# Relationships

**Parents**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
|  | RELATED DOCUMENT | 1..1 |

# 2.14 DOCUMENT DETAILS

## Identification

| | |
|---|---|
| **Label** | DOCUMENT DETAILS |
| **Metadata Type** | Data Group |
| **Identifier** | DG-16720 |
| **OID** | 1.2.36.1.2001.1001.101.102.16720 |

## Definition

| | |
|---|---|
| **Definition** | Information about a document of interest. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |

# Relationships

**Parents**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
| | RELATED DOCUMENT | 1..1 |

**Children**

| Data Type | Name | Occurrences |
|---|---|---|
| | DateTime Health Event Ended | 0..0 |
| | Document Type | 1..1 |
| | DOCUMENT AUTHOR | 1..1 |
| | DOCUMENT CUSTODIAN | 0..0 |
| | Document Title | 0..0 |
| | ADDITIONAL DOCUMENT DETAIL | 0..0 |
| | Document Summary | 0..0 |
| | Effective Period | 0..0 |
| | Document Identifier | 0..1 |

| Data Type | Name | Occurrences |
|---|---|---|
|  | Document Status | 0..0 |

# 2.15 Document Type

## Identification

| | |
|---|---|
| **Label** | Document Type |
| **Metadata Type** | Data Element |
| **Identifier** | DE-10335 |
| **OID** | 1.2.36.1.2001.1001.101.103.10335 |

## Definition

| | |
|---|---|
| **Definition** | Type of the document of interest. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Notes** | Each clinical document can contain, as a coded value, an identification of its document type. This `data element` contains the coded value of *Document Type* of the document of interest. |
| **Data Type** | CodedText |
| **Value Domain** | Document Type Values |

## Usage

| | |
|---|---|
| **Examples** | Please see Appendix C, *Specification Guide for Use* for examples and usage information for CodedText. |
| **Exceptional Values** | Absent values are **PROHIBITED**.<br><br>Abnormal values are **PROHIBITED**. |

# Relationships

**Parents**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
|  | DOCUMENT DETAILS | 1..1 |

# 2.16 Document Type Values

## Identification

| | |
|---|---|
| **Label** | Document Type Values |
| **Metadata Type** | Value Domain |
| **Identifier** | VD-10336 |
| **OID** | 1.2.36.1.2001.1001.101.104.10336 |

## Definition

| | |
|---|---|
| **Definition** | Set of values for *Document Type* for attachments to an *Advance Care Information* structured document. |
| **Definition Source** | Australian Digital Health Agency |

## Value Domain

| | |
|---|---|
| **Source** | NCTIS Document Type Values |
| **Permissible Values** | • Advance care planning document: 16998 *Advance Care Planning Document* NCTIS |

# Relationships

**Parents**

| Data Type | Name | **Occurrences** (child within parent) |
|---|---|---|
|  | Document Type | 1..1 |

# 2.17 DOCUMENT AUTHOR

## Identification

| | |
|---|---|
| **Label** | DOCUMENT AUTHOR |
| **Metadata Type** | Data Group |
| **Identifier** | DG-10296 |
| **OID** | 1.2.36.1.2001.1001.101.102.10296 |

## Definition

| | |
|---|---|
| **Definition** | Composer of the document of interest. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | Author |
| **Notes** | The date on which the attached document is authored is recorded in the *Participation Period* of the *Document Author*. |

## Usage

| | |
|---|---|
| **Conditions of Use** | This is a reuse of the *PARTICIPATION* `data group`, which is described in *Participation Data Specification [NEHT2011v]*. Further constraints on this data group that apply to this reuse of it are listed below.<br><br>Obligation and occurrence constraints:<br><br>• Participation Period is **ESSENTIAL**.<br><br>• LOCATION OF PARTICIPATION is **PROHIBITED**.<br><br>• ELECTRONIC COMMUNICATION DETAIL is **ESSENTIAL**.<br><br>• Relationship to Subject of Care is **PROHIBITED**.<br><br>• EMPLOYMENT DETAIL is **PROHIBITED**.<br><br>• DEMOGRAPHIC DATA is **PROHIBITED**.<br><br>• ENTITLEMENT is **PROHIBITED**.<br><br>• Qualifications is **PROHIBITED**.<br><br>Other constraints:<br><br>• Participation Type **SHALL** have an implementation-specific value equivalent to “Document Author”.<br><br>• Role **SHALL** have an implementation-specific value equivalent to “Not Applicable”.<br><br>• PERSON OR ORGANISATION OR DEVICE **SHALL** be instantiated as a PERSON.<br><br>• In one ELECTRONIC COMMUNICATION DETAIL the value of Electronic Communication Medium **SHALL** have an implementation-specific value equivalent to “Telephone” or “Mobile”, and Electronic Communication Address **SHALL NOT** have an abnormal or absent value. |

| | |
|---|---|
| | Terms used in obligation and occurrence constraints are explained in Appendix C, *Specification Guide for Use*. |
| **Conditions of Use Source** | Australian Digital Health Agency |

# Relationships

**Parents**

| Data Type | Name | **Occurrences** (child within parent) |
|---|---|---|
|  | DOCUMENT DETAILS | 1..1 |

# 2.18 Document Identifier

## Identification

| | |
|---|---|
| **Label** | Document Identifier |
| **Metadata Type** | Data Element |
| **Identifier** | DE-20101 |
| **OID** | 1.2.36.1.2001.1001.101.103.20101 |

## Definition

| | |
|---|---|
| **Definition** | Unique identifier of the document of interest. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Data Type** | UniqueIdentifier |

## Usage

| | |
|---|---|
| **Examples** | Please see Appendix C, *Specification Guide for Use* for examples and usage information for UniqueIdentifier. |

# Relationships

**Parents**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
|  | DOCUMENT DETAILS | 0..1 |

# 2.19 Section Type

## Identification

| | |
|---|---|
| **Label** | Section Type |
| **Metadata Type** | Data Element |
| **Identifier** | DE-16693 |
| **OID** | 1.2.36.1.2001.1001.101.103.16693 |

## Definition

| | |
|---|---|
| **Definition** | Type of section. |
| **Definition Source** | Australian Digital Health Agency |
| **Synonymous Names** | |
| **Notes** | A section's type is identified by a unique identifier, not by a name. |
| **Data Type** | UniqueIdentifier |

## Usage

| | |
|---|---|
| **Conditions of Use** | The value of this item **SHALL** be either the default value or a semantically equivalent value from an appropriate code system. |
| **Conditions of Use Source** | Australian Digital Health Agency |
| **Examples** | Please see Appendix C, *Specification Guide for Use* for examples and usage information for UniqueIdentifier. |
| **Default Value** | 1.2.36.1.2001.1001.101.101.16973 |
| **Exceptional Values** | Absent values are **PROHIBITED**.<br><br>Abnormal values are **PROHIBITED**. |

# Relationships

**Parents**

| Data Type | Name | **Occurrences** (child within parent) |
|---|---|---|
|  | ADVANCE CARE INFORMATION SECTION | 1..1 |

*This page is intentionally left blank.*

# 3 UML Class Diagrams

The following figure represents the data hierarchy using a UML 2.0 class diagram. The diagram displays data groups, sections, structured documents and data elements, together with their names, data types and multiplicities. Data elements are displayed as attributes; data groups, sections and structured documents are displayed as classes; their label names are represented as association role names. Association role names are only displayed if they differ from the associated class name. When a data element has a choice of data types, the data type of the attribute that represents it is an abstract interface class generalised from the individual data types. The diagram shows the data hierarchy excluding the details of participation. The default multiplicity is 1..1.

If a data element's label differs from its name, the label is the attribute name and the name is a stereotype of the attribute. If a data group's or section's label differs from its name, the label is the class name and the name is a stereotype of the class.

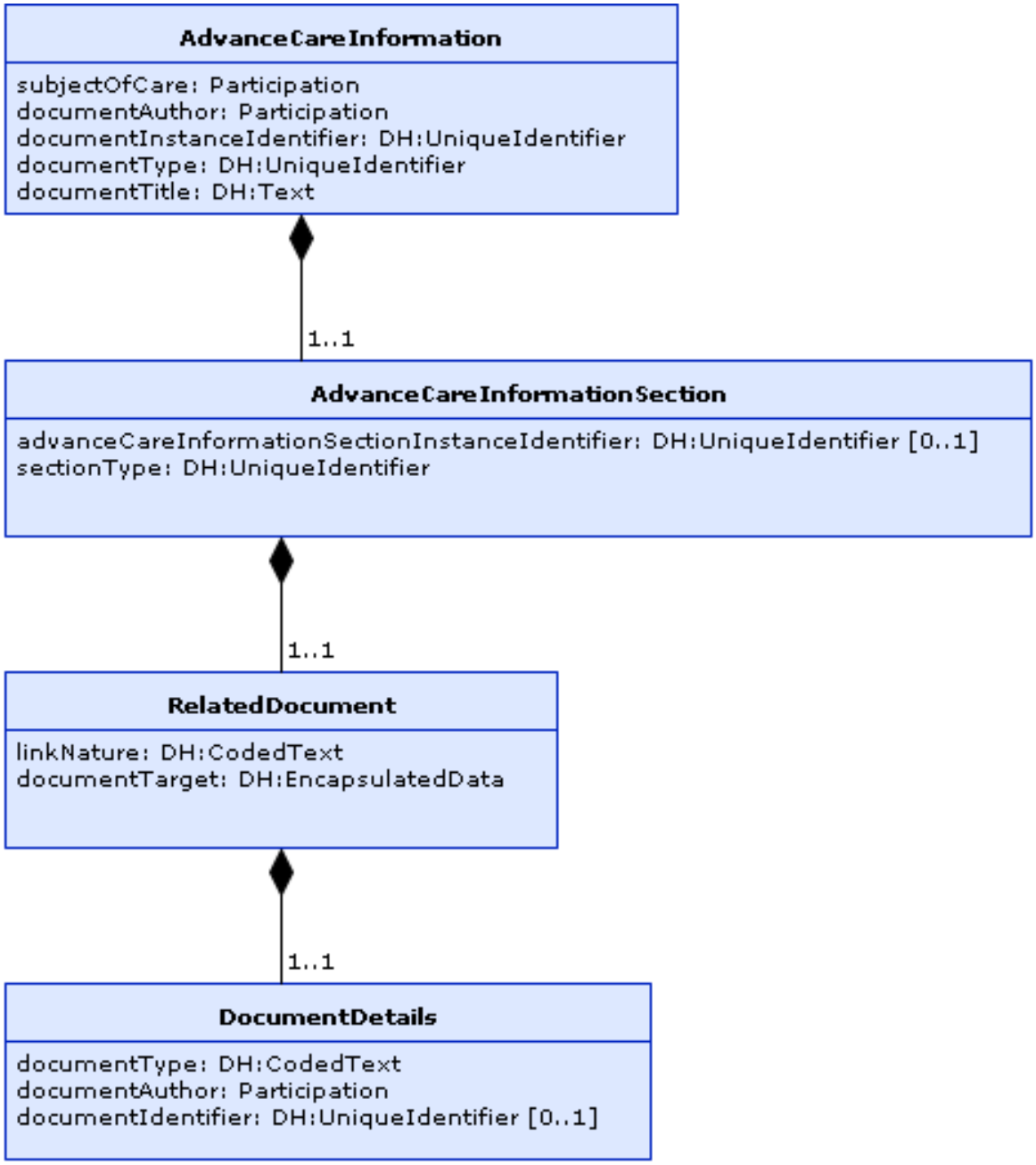


**Figure 3.1. Advance Care Information**

# Appendix A. Mappings from Requirements

This appendix lists data elements from the *My Health Record Advance Care Planning Information Requirements [NEHT2016a]* document and matches them to their associated data elements in this structured content specification (SCS) augmented with *Participation Data Specification [NEHT2011v]*.

Data components are identified by their label, e.g. *Document Details*, rather than by their name, e.g. *Related Document*.

The mapping table below includes links to the SCS data elements that are described in this document.

Some cells in the mapping table are empty. This indicates that the cell has the same value as the cell immediately above it.

In rows with N/A in the *Req No.* column, the *SCS Data Component* column contains one or more definitions of relevant abbreviations, e.g. “Subject of Care [SOC]”.

In rows with an identifier in the *Req No.* column, the *SCS Data Component* column identifies one or more data components, to which the requirement is mapped, unless it contains only notes in italics about the mapping.

| Requirement Section | Data Item | Req No. | SCS Data Component |
|---|---|---|---|
| Advance Care Planning Shared Consumer Document | N/A | N/A | N/A |
| Subject of Care | N/A | N/A | Subject of Care [SOC]<br><br>[SOC] > Participant > Person or Organisation or Device > Person [SOC > P > POD > P] |
| | Individual's electronic communication details (optional) | 024042 | [SOC] > Participant > Electronic Communication Detail |
| Individual (core) | N/A | N/A | N/A |
| | Individual Healthcare Identifier (mandatory) | 022082 | [SOC] > Participant > Entity Identifier |
| | Individual's title (optional) | 022081 | [SOC > P > POD > P] > Person Name > Name Title |
| | Individual's given name (optional) | 023056 | [SOC > P > POD > P] > Person Name > Given Name |
| | Individual's family name (mandatory) | 023058 | [SOC > P > POD > P] > Person Name > Family Name |
| | Individual's name suffix (optional) | 023059 | [SOC > P > POD > P] > Person Name > Name Suffix |
| | Individual's sex (mandatory) | 024032 | [SOC > P > POD > P] > Demographic Data > Sex |
| | Individual's date of birth (mandatory) | 023060 | [SOC > P > POD > P] > Demographic Data > Date of Birth Detail > Date of Birth |
| | Date of birth accuracy indicator (optional) | 024026 | [SOC > P > POD > P] > Demographic Data > Date of Birth Detail > Date of Birth Accuracy Indicator |
| | | 027005 | |

| Requirement Section | Data Item | Req No. | SCS Data Component |
|---|---|---|---|
| CDA Document Author | N/A | N/A | Document Author [DA]<br><br>[DA] > Participant > Person or Organisation or Device > Person [DA > P > POD > P] |
| CDA Document Author - Healthcare Professional | N/A | N/A | N/A |
| | Healthcare provider organisation name (mandatory) | 023070 | [DA > P > POD > P] > Employment Detail > Employer Organisation > Person or Organisation or Device > Organisation > Organisation Name |
| | Healthcare provider individual's workplace address (optional) | 024035 | [DA > P > POD > P] > Employment Detail > Employer Organisation > Address |
| | Healthcare provider individual's workplace electronic communication details (mandatory) | 024892 | [DA > P > POD > P] > Employment Detail > Employer Organisation > Electronic Communication Detail |
| My Health Record participating healthcare provider (core) | N/A | N/A | N/A |
| | Healthcare Provider Identifier-Individual (mandatory) | 023066 | [DA] > Participant > Entity Identifier |
| | Healthcare Provider Identifier-Organisation (mandatory) | 023071 | [DA > P > POD > P] > Employment Detail > Employer Organisation > Entity Identifier |
| | Healthcare provider's title (optional) | 023061 | [DA > P > POD > P] > Person Name > Name Title |
| | Healthcare provider given name (optional) | 023062 | [DA > P > POD > P] > Person Name > Given Name |
| | Healthcare provider family name (mandatory) | 023064 | [DA > P > POD > P] > Person Name > Family Name |
| | Healthcare provider name suffix (optional) | 023065 | [DA > P > POD > P] > Person Name > Name Suffix |
| CDA Document Author - Individual | N/A | N/A | N/A |
| | Individual's electronic communication details (optional) | 024042 | [DA > P > POD > P] > Employment Detail > Employer Organisation > Electronic Communication Detail |

| Requirement Section | Data Item | Req No. | SCS Data Component |
|---|---|---|---|
| | Individual's title (optional) | 022081 | [DA > P > POD > P] > Person Name > Name Title |
| | Individual's given name (optional) | 023056 | [DA > P > POD > P] > Person Name > Given Name |
| | Individual's family name (mandatory) | 023058 | [DA > P > POD > P] > Person Name > Family Name |
| | Individual's name suffix (optional) | 023059 | [DA > P > POD > P] > Person Name > Name Suffix |
| | CDA document author identifier | 027383 | [DA] > Participant > Entity Identifier |
| Advance Care Planning Document Control | N/A | N/A | Advance Care Information Section > Related Document > Document Details [ACIS > RD > DD] |
| | Document type | 026956 | Document Type |
| | Document title | 027207 | Document Title |
| | Date paper document was written (mandatory) | 022070 | [ACIS > RD > DD] > Document Author > Participation Period |
| Advance Care Planning Content | N/A | N/A | N/A |
| | Single ACP attachment (mandatory) | 022062 | [ACIS > RD > DD] > Document Target |
| | Paper document author (mandatory) | 022064 | [ACIS > RD > DD] > Document Author |
| | Attachment author contact details | 027149 | [ACIS > RD > DD] > Document Author > Participant > Electronic Communication Detail |
| | Total attachment size (mandatory) | 022068 | N/A |
| | Attachment document type (mandatory) | 022049 | [ACIS > RD > DD] > Document Type |
| | | 027148 | |

*This page is intentionally left blank.*

# Appendix B. Known Issues

This appendix 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 |
|---|---|
| Links to external resources | Certain combinations of web browsers and PDF readers have problems opening URL links (usually found in reference sections) that span more than one line. |
| Complex design | The design allows Advance Care Information documents to have attachments with a variety of document types (e.g. “Advance care planning document”). Though the final requirements document allows only one type of document to be attached, the flexible design has been kept. |

*This page is intentionally left blank.*

# Appendix C. Specification Guide for Use

## C.1 Overview

The participation data specification, each detailed clinical model (DCM) and each structured content specification (SCS) is designed on a shared basis for data interpretation. Each specifies rigorous business and technical definitions of data that systems may need to share. Each is intended to be a logical specification of the data to be persisted within or communicated between systems. They are also the foundation for the compliance, conformance, and declaration process. Our CDA implementation guides are guides to the implementation of HL7 CDA R2 messages based upon these DCMs and SCSs.

The participation data specification specifies data components that enable a recipient of a document to identify participations within their own systems. Participations record context-specific information about relationships between participants and healthcare events. As such, participations are only meaningful within the context in which they are used.

Each DCM specifies all of the data components required for any use of a clinical concept; for instance, an entry in a medical record such as a procedure or an imaging test. As such, they are maximal data sets. DCMs are building blocks, which are trimmed to size for use in the construction of SCSs.

Each SCS describes a template of a Structured Document. It specifies the data for a single type of clinical document or information exchange, such as a discharge summary. It is assembled using DCMs that have been constrained to eliminate data components not relevant to the particular context. For example, *Procedure* in a discharge summary uses only some of the data components required by *Procedure* in a specialist report.

## C.2 The Structured Content Specification Metamodel

Our metamodel for structured content specifications (see Figure 1) is used to specify the overall structure of a structured content specification. The structure is a tree, so every item in the tree, other than the root node, has a parent node. For an SCS, the root node is a Structured Document. For a DCM, the root node is a Data Group.

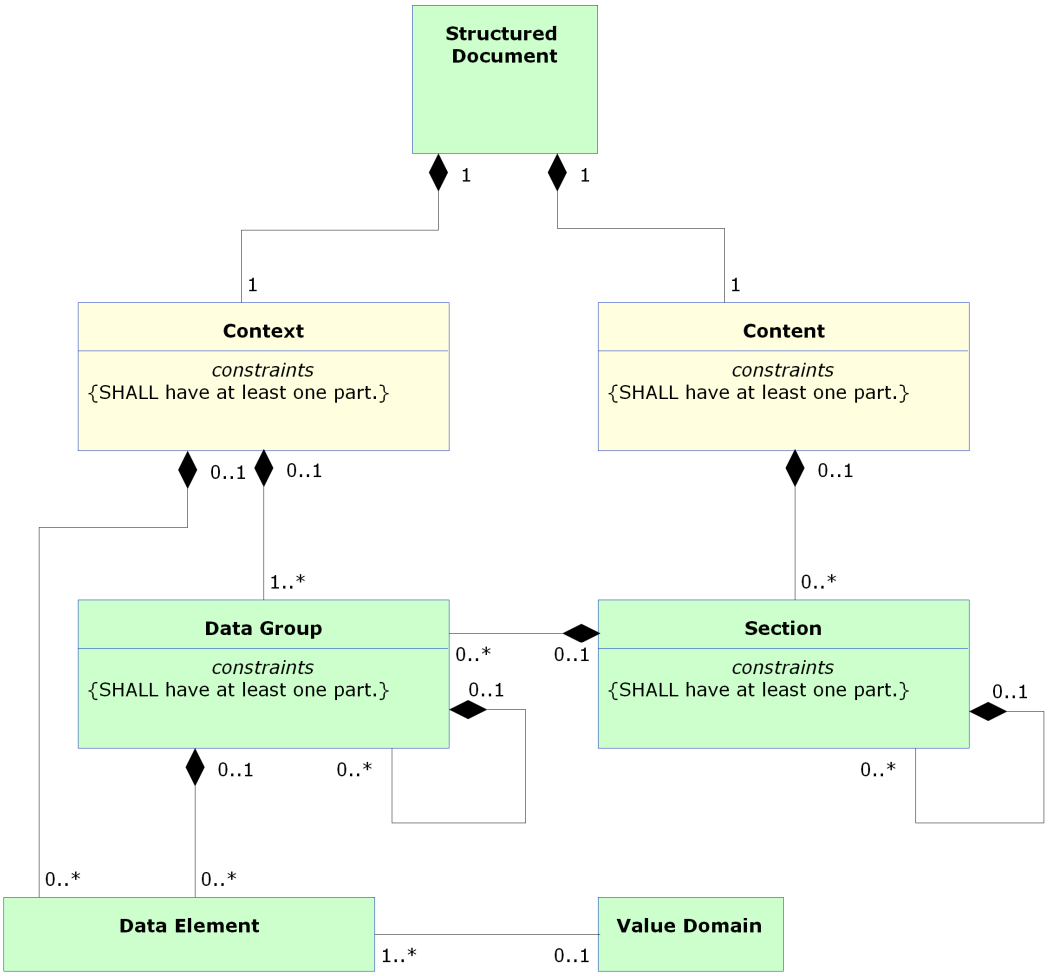


**Figure C.1. SCS Metamodel**

There are two main items used to organise information within an SCS as follows:

Context: This contains information related to the overall context of the document.

Content: This contains information that changes between different SCSs, but is always structured as shown in Figure 1, and consists of the following data components:

- Section
- Data Group
- Data Element
- Value Domain

These data components are described in more detail below.

# Structured Document

A structured document is a collection of health information about a subject of care that is relevant to the ongoing care of that person. They are composed of one or more data groups and data elements that are organised into sections. Ex-

amples of structured documents are *Discharge Summary*, *Shared Health Summary*, and *Advance Care Directive Custodian Record*.

# Context

The purpose of the context is to identify and classify the document and to provide subjects of care and involved healthcare providers with the information related to the relevant healthcare events.

# Content

Content contains a collection of personal information and health information pertinent to a subject of care that is derived from the healthcare event described in the document. The detail is organised into one or more data groups, which are optionally grouped into sections.

# Section

A section is composed of data groups, other sections, or both. It is an organising container that cues the reader about expected content. A section organises information in a manner suitable for the primary purpose for which it is collected and provides a way to navigate through the data components within the document, thereby enabling more efficient querying. It is recommended that the section support safe reuse for secondary purposes, e.g. clinical coding or inclusion in a summarised form in an electronic health record. A section is context-specific to the document in which it resides.

# Data Group

Each data group is used to represent one concept. A data group consists of other data groups, data elements, or both. Some data groups are reused across DCMs.

Every instance of a data group **SHALL** have at least one child data component instantiated.

## Participation

Participation is a special case of a data group that is based on a data group template, which is reused throughout the DCMs and SCSs. Participations are an amalgam of the Actors (see below) operating within a defined healthcare domain and the Roles they are playing within that domain.

A Participant has been defined to align with the concepts of the Agency's *Interoperability Framework [NEHT2007b]*. It equates to an *Entity* that is related to the action described in an SCS as an *Actor*. A Participant can be a human, an organisation, or an IT system.

# Choice

Choice represents a selection, to be made at run-time, of a single member from a set of data groups, where the set is defined at design-time, i.e. one and only one member of the set is chosen for each instance of the choice.

For example, at design-time a healthcare provider provides a service, but it is not until run-time that a decision can be made as to whether the provider is a person or an organisation. Hence, when a healthcare provider *Participant* is instantiated, it will contain either an instance of the *Person* data group or an instance of the *Organisation* data group.

## Data Element

A data element is the smallest named unit of information in the model that can be assigned a value. For example, *DateTime of Observation* and *Observation Note*. Data elements are bound to data types (see Data Types Legend). Some data elements are reused in different data groups.

While all data elements are constrained by their data type, some data elements are further constrained by value domains (see Value Domain below).

## Value Domain

A value domain constrains the permissible values for a data element. The values are often a subset of values based on a generic data type.

Value domains are reusable items, therefore the same value domain can be referred to by different data elements in different contexts. Value domains are often specified with reference to a *reference set*. A reference set is a constrained list of SNOMED CT-AU concepts that are appropriate to a particular context or use. Since many of these reference sets have been developed specifically for the context in which they appear, it is recommended that an assessment of fitness for purpose be undertaken before using any of the reference sets in another context.

Value domains constrain either by specifying a lower or upper bound (or both) on the range of permissible values or by specifying a finite set of prescribed values. Such a set of prescribed values can be specified directly within the definition of the data element, or in a separate but associated specification, or else by reference to one or more vocabulary or terminology reference sets. The table below provides some examples of value domains.

**Table 1: Value Domain Examples**

<table>
<tr><th>Data Element</th><th>Data Type</th><th>Example of Value Domain</th></tr>
<tr><td>Sex</td><td>CodedText</td><td>Standards Australia AS 4846 (2006) – Health Care Provider Identification [SA2006a] and Standards Australia AS 5017 (2006) – Health Care Client Identification [SA2006b] derive their values from METeOR 287316, which includes values such as:
<table>
<tr><th>Value</th><th>Meaning</th></tr>
<tr><td>1</td><td>Male</td></tr>
<tr><td>2</td><td>Female</td></tr>
<tr><td>3</td><td>Intersex or Indeterminate</td></tr>
<tr><td>9</td><td>Not Stated/Inadequately Described</td></tr>
</table></td></tr>
<tr><td>Diagnosis</td><td>CodeableText</td><td>A SNOMED CT-AU reference set that references concepts such as “Bronchitis” (Concept ID: 32398004).</td></tr>
<tr><td>Therapeutic Good Identification</td><td>CodeableText</td><td>An AMT reference set that references concepts such as “Ibuprofen Blue (Herron) (ibuprofen 200 mg) tablet: film-coated, 1 tablet” (Concept ID: 54363011000036107).</td></tr>
<tr><td>Individual Pathology Test Result Name</td><td>CodeableText</td><td>A LOINC subset that references concepts such as “Cholesterol [Moles/volume] in Serum or Plasma” (ID: 14647-2).</td></tr>
</table>

# C.3 Icon Legend

These legends describe all icons that are used in the Agency's DCMs and SCSs.

# Metadata Types Legend

The following table explains each of the icons used to represent the metadata types within DCMs and SCSs.

**Table 2: Metadata Types Legend**

| Icon | Metadata Types |
|---|---|
|  | Structured Document |
|  | Section |
|  | Data Group |
|  | Participation |
|  | Choice |

# Data Types Legend

The following table explains each of the icons used to represent the data types bound to each data element in the SCSs. These data types are a profile of the **ISO 21090-2011** data types as specified in *Data Types in NEHTA Specifications: A Profile of the ISO 21090 Specification [NEHT2010c]*.

**Table 3: Data Types Legend**

| Icon | Data type | Explanation |
|---|---|---|
|  | Any<br><br>(ISO 21090: ANY) | Use of this icon indicates that instances of the data element can be of any concrete data type. There are no limitations on the data type of the data element.<br><br>The values that can be required will vary considerably depending on the context. This is an abstract data type that is the basis for all data types and **SHOULD NOT** be used in an actual implementation. |
|  | Boolean<br><br>(ISO 21090: BL) | A data type, sometimes called the logical data type, having one of the two values: *true* and *false*.<br><br>Many systems represent true as *non-zero* (often 1, or -1) and false as *zero*.<br><br>**Usage/Examples**<br><br>• An actual value entered by a user might be “yes” or could be chosen by a mouse click on an icon such as ☑. |

CodeableText

(ISO 21090: CD)

Coded text *with* exceptions; supports various ways of holding text, both free text and coded text.

Often used to support compliance for early adopters of the structured content specifications.

While it is recommended that the values in this data type come from the bound value domain, it allows other value domains to also be used (with or without translations to the bound value domain) or free text alternatives. This is useful when it is not possible to define an entire value domain for a complex concept (e.g. *Diagnosis*) and when there are competing code sets in existence. Note that within exchange specifications or message profiles this data type **MAY** be constrained to mandate compliance with the bound value domain.

**Usage/Examples**

- The Australian Institute of Health and Welfare (AIHW) defines a data element concept *Episode of admitted patient care-separation mode* (the status at separation of a subject of care and the place to which they are released). An early adopter could have a similar concept (coded or otherwise) that maps to this data element but does not strictly comply with the AIHW values.
- A SNOMED CT-AU coded/complex expression that embodies single or multiple concepts. The SNOMED CT-AU concepts behind these CodeableText data elements are specified in the structured content specification value domains.

CodedText

(ISO 21090: CD)

Coded text *without* exceptions; text with code mappings. Values in this data type **SHALL** come from the bound value domain, with no exceptions.

Often used for reference sets with only a small number of applicable values, e.g. Gender and Document Status.

**Usage/Examples**

*Standards Australia AS 5017 (2006) – Health Care Client Identification [SA2006b]* specifies the following value domain representing a type of address:

| Value | Meaning |
|---|---|
| 1 | Business |
| 2 | Mailing or Postal |
| 3 | Temporary Accommodation |
| 4 | Residential (permanent) |
| 9 | Not Stated/Unknown/Inadequately Described |

DateTime

(ISO 21090: TS)

A single date, optionally with a time of day.

Has the ability to indicate a level of precision, but not whether the date or time is estimated. Cannot represent a time alone.

String representations of known dates **SHALL** conform to the format within the **ISO 21090-2011** standard without the use of extensions, i.e. YYYY[MM[DD[HH[MM[SS[.U[U[U[U]]]]]]]]][+|-ZZzz].

**Usage/Examples**

- Partial dates: 2008, 20081001.
- To indicate 1:20 pm on May the 31st, 1999 for a time zone that is 10 hours ahead of Coordinated Universal Time (UTC): 19990531132000+1000.

| | | |
|---|---|---|
|  | Duration<br><br>(ISO 21090: PQ.TIME) | The period of time during which something continues.<br><br>Consists of a value and a unit that represents the time value, e.g. hours, months.<br><br>Compound durations are not allowed, e.g. 10 days 3 weeks 5 hours.<br><br>**Usage/Examples**<br><br>• 3 hours<br><br>• 6 months<br><br>• 1 year |
|  | EncapsulatedData<br><br>(ISO 21090: ED) | Data that is primarily intended for human interpretation or for further machine processing outside the scope of this specification. This includes unformatted or formatted written language, multimedia data, or structured information as defined by a different standard (e.g. XML signatures).<br><br>**Usage/Examples**<br><br>• JPEG images<br><br>• HTML documents<br><br>• [RFC1521] MIME types |
|  | Integer<br><br>(ISO 21090: INT) | The mathematical data type comprising the exact integral values.<br><br>**Usage/Examples**<br><br>• 1<br><br>• -50<br><br>• 125 |
|  | Link<br><br>(ISO 21090: TEL) | A general link, reference or pointer to an object, data or application that exists logically or is stored electronically in a computer system.<br><br>**Usage/Examples**<br><br>• URL (Uniform Resource Locator) – the World Wide Web address of a site on the internet, such as the URL for the Google internet search engine – *http://www.google.com*.<br><br>• An absolute or relative path within a file or directory structure – e.g. in the Windows operating system, the “link” or absolute path to a particular letter could be *C:\Documents and Settings\GuestUser\MyDocuments\letter.doc* |
|  | Quantity<br><br>(ISO 21090: PQ) | A magnitude value with a unit of measurement.<br><br>This is used for recording many real world measurements and observations. As the default unit of measure is 1, even counts of items can be recorded with *Quantity*.<br><br>**Usage/Examples**<br><br>• 100 centimetres<br><br>• 25.5 grams<br><br>• 3 per month |

QuantityRange

(ISO 21090: IVL)

A range of *Quantity* values.

It may be identified using a combination of an optional minimum *Quantity* and an optional maximum *Quantity* (i.e. lower and upper bounds).

This is typically used for defining the valid range of values for a particular measurement or observation. Unbounded quantity ranges can be identified by not including a minimum or a maximum *Quantity* value.

**Usage/Examples**

- -20 to 100 Celsius
- 30-50 mg
- >10 kg
- 2-3 hours

QuantityRatio

(ISO 21090: RTO)

A relative magnitude of two *Quantity* values.

Usually recorded as numerator and denominator.

**Usage/Examples**

- 25 mg / 500 ml
- 200 mmol per litre

Real

(ISO 21090: REAL)

A computational approximation to the standard mathematical concept of real numbers.

These are often called floating-point numbers.

**Usage/Examples**

- 1.075
- -325.1
- 3.14157

Text

(ISO 21090: ST)

A character string (with optional language) containing any combination of alpha, numeric, or symbols from the Unicode character set. Also referred to as *free text*.

**Usage/Examples**

"The patient is a 37 year old man who was referred for cardiac evaluation after complaining of occasional palpitations, racing heart beats and occasional dizziness."

TimeInterval

(ISO 21090:IVL)

An interval in time.

It is identified using a combination of an optional start *DateTime*, an optional end *DateTime*, and an optional *Duration*.

**Usage/Examples**

- 20080101+1000 - 20081231+1000
- 200801010130+1000 - 200801011800+1000
- 200801010130+1000, duration=16.5 hours

| | | |
|---|---|---|
|  | UniqueIdentifier<br><br>(ISO 21090: II) | A unique value used to identify a physical or virtual object or concept.<br><br>In using this data type, the attributes of the UniqueIdentifier data type **SHOULD** be populated from the identifiers as defined in *AS 4846 (2006) – Health Care Provider Identification [SA2006a]* and *AS 5017 (2006) – Health Care Client Identification [SA2006b]* as follows:<br><br>• *root*: a globally unique object identifier that identifies the combination of geographic area, issuer and type. If no such globally unique object identifier exists, it **SHALL** be created.<br><br>• *extension*: a unique identifier within the scope of the root that is directly equivalent to the identifier designation element.<br><br>• *identifierName*: a human readable name for the namespace represented by the root that is populated with the issuer or identifier type values, or a concatenation of both, as appropriate. The content of this attribute is not intended for machine processing and **SHOULD NOT** be used for that purpose.<br><br>• *identifierScope*: the geographic span or coverage that applies to or constrains the identifier. It is directly equivalent to the geographic area element. The content of this attribute is not intended for machine processing and **SHOULD NOT** be used as such.<br><br>Also, the following constraints apply on the UniqueIdentifier data type:<br><br>1) The *root* attribute **SHALL** be used.<br><br>2) For an Entity Identifier, the *root* attribute **SHALL** be an OID that consists of a node in a hierarchically assigned namespace, formally defined using the ITU-T's ASN.1 standard.<br><br>3) For an Entity Identifier, the *root* attribute **SHALL NOT** be a UUID.<br><br>**Usage/Examples**<br><br>Australian health identifiers (e.g. IHI, HPI-I and HPI-O) and patient hospital medical record numbers are examples of identifiers that may be carried by data elements of this data type. |

# Keywords Legend

Where used in this document and in DCMs and SCSs, the keywords **SHALL, SHOULD, MAY, SHALL NOT** and **SHOULD NOT** are to be interpreted as described in *Key Words for Use in RFCs to Indicate Requirement Levels [RFC2119]*. Our specifications use the terms **SHALL** in place of “MUST” and **SHALL NOT** in place of “MUST NOT”. The key word definitions in RFC 2119, adjusted to remove the key words not used in the Agency specifications, are presented in the following table.

**Table 4: Keywords Legend**

| Keyword | Definition |
|---|---|
| **SHALL** | This word means that the statement is an absolute requirement of the specification. |
| **SHOULD** | This word means that there may exist valid reasons in particular circumstances to ignore a particular data component, but the full implications must be understood and carefully weighed before choosing a different course. |

| | |
|---|---|
| **MAY** | This word means that a data component is truly optional. One implementer may choose to include the data component because a particular implementation requires it, or because the implementer determines that it enhances the implementation, while another implementer may omit the same data component. An implementation that does not include a particular option shall be prepared to interoperate with another implementation that does include the option, perhaps with reduced functionality. In the same vein, an implementation that does include a particular option shall be prepared to interoperate with another implementation that does not include the option (except of course, for the feature the option provides). |
| **SHALL NOT** | This phrase means that the statement is an absolute prohibition of the specification. |
| **SHOULD NOT** | This phrase means that there may exist valid reasons in particular circumstances when the particular behaviour is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behaviour described with this label. |

# Obligation Legend

In DCMs and SCSs obligations on a data component specify whether or not it **SHALL** be populated in the logical record architecture of a message. We intend that all data components that are not **PROHIBITED** will be implemented.

Obligations in statements about values specify whether or not certain values are permitted.

Implementation guides specify the rules and formats for implementing and populating data components in specific messaging formats.

The following table defines the obligations.

**Table 5: Obligations Legend**

| Keyword | Interpretation |
|---|---|
| **ESSENTIAL** | Indicates that the data component is considered a mandatory item of information and **SHALL** be populated.<br><br>**Usage/Examples:**<br><br>The Participant data component for a Subject of Care **SHALL** include an Entity Identifier data component in order to hold the IHI. |
| **OPTIONAL** | Indicates that the data component is not considered a mandatory item of information and **MAY** be populated.<br><br>**Usage/Examples:**<br><br>Such data components will be implemented, only inclusion and population are optional.<br><br>This is only needed when a DCM incorrectly asserts that a data component is **ESSENTIAL**. It will be used with a note stating that the DCM needs revision. |
| **PROHIBITED** | On a data component this indicates that the data component is considered a forbidden item of information and **SHALL NOT** be included.<br><br>In a statement about values this indicates that the use of the specified values is considered forbidden and they **SHALL NOT** be used.<br><br>**Usage/Examples:**<br><br>Within a Participation data group depicting a Subject of Care, the Participation Healthcare Role **SHALL NOT** be populated. |

| | |
|---|---|
| **CONDITIONAL** | Indicates that a data component is considered **ESSENTIAL** only on satisfaction of a given condition. Individual data components specify the obligation of the data component when the condition is not met.<br><br>When a condition is met, the data component is considered to be **ESSENTIAL** and **SHALL** be populated.<br><br>When a condition is not met, the data component may be considered **PROHIBITED**, or the data component may be considered **OPTIONAL**.<br><br>**Usage/Examples:**<br><br>Within a Pathology Result Report, the *Specimen Detail* `data group` is **ESSENTIAL** if the requested test is to be performed on a specimen; otherwise it **SHALL NOT** be included. |

Obligations follow the usual scope rules: where **ESSENTIAL** child data components are contained within **OPTIONAL** parent data components, the child data components **SHALL NOT** be included when the parent is not included.

# C.4 Exceptional Values

Occasionally a data element will have an exceptional value: an abnormal value (i.e. the value cannot be described using the expected set of values) or an absent value (i.e. no value is provided). Some abnormal values are only relevant to data elements of certain data types (e.g. positive infinity is relevant to numbers but not Booleans).

Unless otherwise specified, all data elements are permitted to have exceptional values. Constraints on the use of exceptional values are contained in the Exceptional Values row of the Usage section, except for instances of Participation, when they are in the Conditions of Use row. The most common statements constraining exceptional values are:

- Absent values are **PROHIBITED**.
- Abnormal values are **PROHIBITED**.

The commonly used implementation specifications ISO 21090 and HL7 CDA R2 use *nullFlavor* to manage abnormal and absent values.

The following table provides a classification of nullFlavor values as abnormal or absent.

**Table 6: Classification of ISO 21090 nullFlavor values as absent or abnormal**

| Level | Code | Term | Abnormal | Absent |
|---|---|---|---|---|
| 1 | NI | No information | | Absent |
| 2 | INV | Invalid | Abnormal | |
| 3 | OTH | Other | Abnormal | |
| 4 | PINF | Positive infinity | Abnormal | |
| 4 | NINF | Negative infinity | Abnormal | |
| 3 | UNC | Unencoded | Abnormal | |
| 3 | DER | Derived | Abnormal | |
| 2 | UNK | Unknown | | Absent |
| 3 | ASKU | Asked but unknown | | Absent |
| 4 | NAV | Temporarily unavailable | | Absent |
| 3 | NASK | Not asked | | Absent |
| 3 | QS | Sufficient quantity | Abnormal | |
| 3 | TRC | Trace | Abnormal | |
| 2 | MSK | Masked | | Absent |

| Level | Code | Term | Abnormal | Absent |
|---|---|---|---|---|
| 2 | NA | Not applicable | | Absent |

# C.5 Information Model Specification Parts Legends

This section illustrates the format and parts used to define each section, data group and data element within the Agency's DCMs and SCSs, and identifies when each part is applicable.

## Chapter Name

Each section, data group, data element, value domain or choice has its own eponymous chapter. The chapter name is used in all data hierarchies.

## Identification Section Legend

The following table illustrates the layout of the Identification section and describes the various parts of the section.

**Table 7: Identification Section Legend**

| | |
|---|---|
| **Label** | A suggested display name for the data component. |
| **Metadata Type** | The type of the data component, e.g. section, data group or data element. |
| **Identifier** | An Agency-assigned internal identifier of the data component.<br><br>Note that if one data component is used twice (e.g. *Therapeutic Good Identification* is used in both *Medication Instruction* and *Medication Action*), both uses of the data component will have the same identifier. A data component identifier identifies a data component, not a **use** of a data component. |
| **OID** | An object identifier equivalent to the data component identifier. |
| **External Identifier** | An identifier of the concept represented by the data component that is assigned by an organisation other than the Agency. |

## Definition Section Legend

The following table illustrates the layout of the Definition section and describes the various parts of the section.

**Table 8: Definition Section Legend**

| | |
|---|---|
| **Definition** | The meaning, description or explanation of the data component.<br><br>For data groups used in a particular context, the definition **MAY** be a refinement of the generic data group definition. |
| **Definition Source** | The authoritative source for the Definition statement. |
| **Synonymous Names** | A list of any names the data component may also be known as.<br><br>Implementers may prefer to use synonymous names to refer to the data component in specific contexts. |
| **Scope** | Situations in which the data component may be used, including the Scope circumstances where specified data are required or recommended. |

| | |
|---|---|
| | For example, Medication Instruction (data group) has a scope that includes all prescribable therapeutic goods, both medicines and non-medicines.<br><br>This item is not relevant to data elements or value domains. |
| **Scope Source** | The authoritative source for the Scope statement. |
| **Context** | The environment in which the data component is meaningful, i.e. the circumstance, purpose and perspective under which this data component is defined or used.<br><br>For example, Street Name has a context of Address.<br><br>This item is applicable only to data elements. |
| **Assumptions** | Suppositions and notions used in defining the data component. |
| **Assumptions Source** | The authoritative source for the Assumptions statement. |
| **Notes** | Informative text that further describes the data component, or assists in the understanding of how the data component can be used. |
| **Data Type** | The data type (or data types) of the data element, e.g. DateTime or Text.<br><br>The valid data types are specified in the Data Types Legend.<br><br>This item is applicable only to data elements. |
| **Value Domain** | The name of the Value Domain used to define the range of values of the data element, or a statement describing what values to use in the absence of a defined value domain for the related data element.<br><br>The statement is:<br><br>In the absence of national standard code sets, the code sets used **SHALL** be registered code sets, i.e. registered through the HL7 code set registration procedure with an appropriate object identifier (OID), and **SHALL** be publicly available.<br><br>When national standard code sets become available, they **SHALL** be used and the non-standard code sets **SHALL** be deprecated.<br><br>This item is applicable only to data elements with data type CodedText or CodeableText. |

# Data Hierarchy

The top-level data components (a Structured Document in an SCS or Data Groups in a DCM) contain a data hierarchy. Each row contains information about a single data component. The entries are nested to represent inclusion of one data component in another. Each entry contains at least three occupied cells. The left-most cell contains an icon to indicate the entry's data type. The next cell to the right contains the label of the data component (if the label is different from the name, the name is displayed in brackets after the label). The next cell to the right contains the multiplicity range for the data component.

If a row is not shaded, this indicates that the data component **SHOULD** be used. Where the minimum multiplicity is zero, this does not mean that it is optional to support the data component in the clinical information system, rather it means that the clinical information system has the capability to record that data component but that it may not populate it in a particular clinical document instance.

If a row is shaded grey, this indicates that the data component **SHOULD NOT** be used. This will be because analysis of requirements either did not find reasons to use it or found reasons to not use it.

If the text in a row is in a ~~strike through~~ font and the multiplicity is 0..0, this indicates that the data component **SHALL NOT** be used. This will be because analysis of requirements found reasons to prohibit the use of it.

## Sample SCS Data Hierarchy

### Note

Items below whose text is lighter (mid-blue and mid-grey) are technical identifiers whose purpose is to facilitate interoperability, sharing of data and secondary use. Typically, such identifiers will be generated internally by systems and not displayed to users since they rarely have clinical significance.

Items below with a grey background are data components that are included in the relevant detailed clinical model specification, but whose use is discouraged in this particular scenario.

Items below with a clear background are data components whose use is encouraged in this particular scenario.

| | | | |
|---|---|---|---|
| SPECIALIST LETTER | | | |
| CONTEXT | | | |
| | SUBJECT OF CARE | | 1..1 |
| | DOCUMENT AUTHOR | | 1..1 |
| | ENCOUNTER | | 1..1 |
| | | DateTime Subject of Care Seen ( DateTime Health Event Started) | 1..1 |
| | | DateTime Health Event Ended | 0..0 |
| | | HEALTHCARE FACILITY | 0..0 |
| | Document Instance Identifier | | 0..1 |
| | RELATED INFORMATION | | 0..0 |
| | Document Type | | 1..1 |
| CONTENT | | | |
| | RESPONSE DETAILS | | 1..1 |
| | | Diagnosis (PROBLEM/DIAGNOSIS) | 0..* |
| | | Diagnosis Name (Problem/Diagnosis Identification) | 1..1 |
| | | Clinical Description | 0..0 |
| and more | | | |

# Value Domain Section Legend

The following table illustrates the layout of the Value Domain section and describes the various parts of the section.

**Table 9: Value Domain Section Legend**

| | |
|---|---|
| **Source** | The name of the terminology or vocabulary from which the value domain's permissible values are sourced, e.g. SNOMED CT-AU, LOINC. |
| **Version Number** | Version number of the value domain source. |
| **Permissible Values** | A specification of the permissible values in the value domain.<br><br>This may be a list of codes. (Each code is typically presented as a triple with code values, text equivalent, and description) for example:<br><br>1, Registered No result yet available.<br><br>This may be a conformance statement (e.g. "The permissible values are the members of the following seven AMT reference sets: ..."). |

# Usage Section Legend

The following table illustrates the layout of the Usage section and describes the various parts of the section.

**Table 10: Usage Section Legend**

| | |
|---|---|
| **Examples** | Sample values for the data element, with or without notes about sample values.<br><br>Where a data element has an associated value domain, examples representative of that domain are used where possible. Where the value domain is yet to be determined, indicative examples are provided.<br><br>Implementation guides may contain specific examples of how data elements may be populated and how they relate to each other.<br><br>This item is applicable only to data elements. |
| **Conditions of Use** | Prerequisites, provisos or restrictions for use of the data component. |
| **Conditions of Use Source** | The authoritative source for the Conditions of Use statement. |
| **Misuse** | Incorrect, inappropriate or wrong uses of the data component. |
| **Default Value** | A common denomination, or at least a usable denomination, from the Value Domain where available or applicable, typically assigned at the creation of an instance of the data component. |
| **Exceptional Values** | A statement of limitations on the use of exceptional values, see Exceptional Values.<br><br>Unless otherwise specified, all data elements are permitted to have exceptional values. The most common statements constraining exceptional values are:<br><br>• Abnormal values are **PROHIBITED**.<br><br>• Absent values are **PROHIBITED**.<br><br>This item is applicable only to data elements. |

# Relationships Section Legend

The Relationships section specifies the cardinality between parent and child data components.

The following table illustrates the layout of the Parent relationships table. Note that the occurrences in the relationships described by this table are from the parent to the child data component, i.e. from the data component listed in the table to the data component described by the section.

**Table 11: Parent Legend**

| Data Type | Name | Occurrences (child within parent) |
|---|---|---|
| The icon illustrating the metadata type or data type. | Parent Data Component Name | The minimum and maximum number of instances of the data component described on this page that **SHALL** occur. |

The following table illustrates the layout of the Children relationships table.

**Table 12: Children Legend**

| Data Type | Name | Occurrences |
|---|---|---|
| The icon illustrating the metadata type or data type. | Child Data Component Name | The minimum and maximum number of instances of the data component described on this page that **SHALL** occur. |

# Reference List

[ABS2009] Australian Bureau of Statistics, 25 June 2009, *1220.0 - ANZSCO - Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1*, accessed 21 November 2016. http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/-E8A05691E35F4376CA257B9500138A52?opendocument

[DH2016a] Australian Government Department of Health, 2016, *My Health Record Glossary*, accessed 10 November 2016. https://myhealthrecord.gov.au/internet/mhr/publishing.nsf/Content/glossary

[DH2017f] Australian Digital Health Agency, 21 December 2017, *Advance Care Information CDA Implementation Guide*, Version 1.0. https://developer.digitalhealth.gov.au/resources-and-documentation/clinical-documents/-ep-2322-2017/dh-1532-2017

[HL7CDAR2] Health Level Seven, Inc., January 2010, *HL7 Clinical Document Architecture*, Release 2, accessed 17 October 2016. http://www.hl7.org/implement/standards/product_brief.cfm?product_id=7

[ISO2009a] International Organization for Standardization, 14 Jan 2009, *ISO 13606-3:2009 Health informatics - Electronic health record communication - Part 3: Reference archetypes and term lists*, Edition 1 (Monolingual), accessed 18 August 2016. https://infostore.saiglobal.com/store/Details.aspx?ProductID=1092099

[NEHT2007b] National E-Health Transition Authority, 17 August 2007, *Interoperability Framework*, Version 2.0, accessed 21 February 2017. http://www.digitalhealth.gov.au/implementation-resources/ehealth-foundations/EP-1144-2007/-NEHTA-1146-2007

[NEHT2010c] National E-Health Transition Authority, September 2010, *Data Types in NEHTA Specifications: A Profile of the ISO 21090 Specification*, Version 1.0, accessed 21 February 2017. https://www.digitalhealth.gov.au/implementation-resources/clinical-documents/EP-1135-2010/-NEHTA-1136-2010

[NEHT2011v] National E-Health Transition Authority, 20 July 2011, *Participation Data Specification*, Version 3.2, accessed 06 September 2016. https://www.digitalhealth.gov.au/implementation-resources/clinical-documents/EP-1224-2011/-NEHTA-0794-2011

[NEHT2016a] National E-Health Transition Authority, *My Health Record Advance Care Planning Information Requirements*, Version 1.0.1.

[RFC1521] Network Working Group, 1993, *RFC1521 - MIME (Multipurpose Internet Mail Extensions) Part One*, accessed 11 November 2016. http://www.faqs.org/rfcs/rfc1521.html

[RFC2119] Network Working Group, 1997, *Key Words for Use in RFCs to Indicate Requirement Levels*, accessed 11 November 2016. https://tools.ietf.org/html/rfc2119

[SA2006a] Standards Australia, 2006, *AS 4846 (2006) – Health Care Provider Identification*, accessed 11 November 2016. http://infostore.saiglobal.com/store/Details.aspx?ProductID=318554

[SA2006b] Standards Australia, 2006, *AS 5017 (2006) – Health Care Client Identification*, accessed 11 November 2016. http://infostore.saiglobal.com/store/Details.aspx?ProductID=320426

*This page is intentionally left blank.*

# Index

*This page is intentionally left blank.*