



SCT-AU Terminology Construct

e-Medications Management - ePrescribing Release 1.0

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Document information

Change history

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0.2	10-02-2009	Pan Teng	Amended content
0.3	9-04-2009	Wendy Larson	Incorporated review feedback
0.4	23-04-2009	Wendy Larson	Incorporated review feedback

Related Artefacts

The following table refers to artefacts mentioned in this document. For a full list of all related material, with associated links, refer to the Release Note.

Name	Version/Date
NEHTA Structured Document Template ePrescribing – General Practitioner to Community Pharmacist Structured Document Template	April 2009 v0.6
SNOMED Clinical Terms SNOMED Clinical Terms –Technical Reference Guide SNOMED Clinical Terms -User Guide	31st January 2009 International Release
NEHTA Dosage Terminology artefacts Dosage Terminology Approach Document Dosage Terminology Reference Set Analysis	April 2009 v1.1 v1.1
Australian Medicines Terminology (AMT) technical artefacts Australian Medicines Terminology Technical Specifications	April 2007 V3.0
Australian Medicines Terminology (AMT) artefacts Australian Medicines Terminology Editorial Rules Australian Medicines Terminology Release 1.3 UML Class Diagram	March 2008 v2.0 v7.0
Australian Medicines Terminology (AMT) release artefacts AMT Release Notes AMT Distribution Files AMT Viewers	As published monthly
Australian Medicines Terminology (AMT) reference set artefacts AMT Reference Set Approach AMT Reference Set Analysis	As published monthly
e-Medications Management Release Artefacts e-Medications Terminology Cover Note e-Medications Terminology Release Note	April 2009

1 Introduction

Increasing demand for health information to be electronically exchanged between healthcare settings has triggered a need for national standards specifying the content and structure of information.

One prerequisite to the safe exchange of clinical information between healthcare providers is the establishment of a common, coded clinical language (**clinical terminology**). The concepts and descriptions (or terms) used in clinical communications that describe diagnoses, procedures, therapies, medications, and other clinical ideas must be accurately and consistently interpreted by all health IT systems and the clinicians that interact with them.

The role of NEHTA Clinical Terminology Services (CTS) is to provide terminology intended to be a standard adopted by Health IT in Australia.

SNOMED Clinical Terms[®] has been endorsed by the Australian Health Ministers Advisory Council (AHMAC) as the preferred national clinical terminological resource.

Where SNOMED CT does not provide concept and descriptions suitable for use, NEHTA will supplement SNOMED CT by developing specific reference sets and the addition of specific concepts that reflect Australian requirements.

In the future, NEHTA will also identify and recommend existing standards for non-clinical terminology that will be required to populate the electronic message profile.

1.1 Scope

NEHTA has been tasked by governments to identify and foster the development of the right technology necessary to achieve e-health interoperability. To this end, NEHTA is developing and releasing specifications and terminology to facilitate a migration path to deliver short, mid and long term goals to support interoperability.

The scope of the specification for this first e-Medication Management (eMM) release is to support the communication of an electronic prescription (e-prescription) from a General Practitioner/Specialist to a community pharmacist.

The initial focus of CTS terminology development to support this specification is on the **clinical** terminology requirements and in particular the terminology required for the Prescription Data Group.

1.2 Document Purpose

This document describes the link between the NEHTA published specifications and the NEHTA developed terminology in support of the current scope.

To obtain a more detailed understanding of these areas, this document should be read in conjunction with:

1. e_Prescribing - General Practitioner to Community Pharmacist Structured Document Template.

A Structured Document Template specifies the Logical Record Architecture and organises the data elements from NEHTA Data Groups into a logical information model for clinical communication for a given purpose.

2. NEHTA AMT Reference Set Approach Document, which describes the approach taken to develop the medications terminology content; and
3. NEHTA Dosage Terminology Approach Document which describes the approach taken to develop the dosage terminology content;

These published core terminology artefacts, provide more detail of the way that the SNOMED CT Concept Model is used in an ePrescribing clinical context and reconciles this against the underlying information model.

Refer to the Release Note for links to the location of these documents.

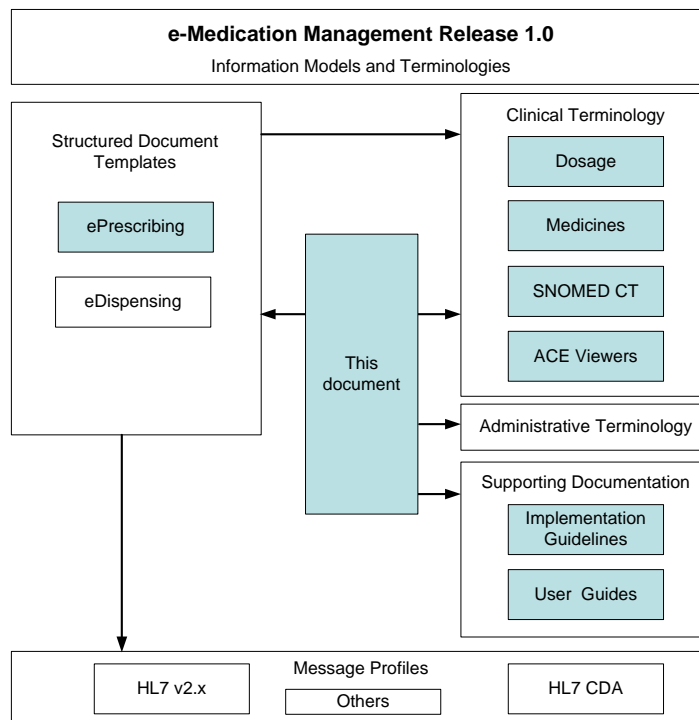


Figure 1: Document Roadmap for ePrescribing

1.3 Reference Set Development & Purpose.

At their simplest, Reference Sets are a mechanism used to create a subset of content. Typically each of the reference sets is used to represent a set of components for a specific purpose within a defined scope.

For more information on the basics of terminology and reference sets refer to the SCT-AU Reference Set Implementation Guide.

The clinical terms comprising this release are not for implementation in live clinical systems at this stage, but are made available for comment.

1.4 Intended Audience

This document provides a construct of selected underlying clinical terminologies to meet a specific purpose. It is provided as a draft for comment by all interested parties routinely engaged in the healthcare domain, vendors, jurisdictions, general practitioners and medical officers, nurses, pharmacists and allied health professionals.

Refer to the Cover Note for information on providing feedback.

1.5 Acronyms, Abbreviations

The following acronyms and abbreviations have been referred to within this document.

AHMAC	Australian Health Ministers' Advisory Council
AMT	Australian Medicines Terminology
CTS	NEHTA Clinical Terminology Services
DE	Data Element as described in the Structured Document Template
DG	Data Group as described in the Structured Document Template
EMM	e-Medication Management
IHTSDO	International Health Terminology Standards Development Organisation
NEHTA	National E-Health Transition Authority
PBS	Pharmaceutical Benefits Scheme
RPBS	Repatriation Pharmaceutical Benefits Schedule
SNOMED CT	Systematized Nomenclature of Medicine - Clinical Terms
SDT	NEHTA Structured Document Template

1.6 Definitions

A prescription is defined in [AS4700.3-2007] as:

"A formal Medication Order (printed or electronic) complying with all regulatory requirements"

ePrescribing is defined in [KPMG-2008] as:

"the process by which a prescription is electronically generated by a prescriber, authenticated (electronically signed), securely transmitted (either directly or indirectly) for dispensing and supply, seamlessly integrated into the pharmacy dispensing software and, in the case of Pharmaceutical Benefits Scheme (PBS) prescriptions, is available to be electronically sent to Medicare Australia for claiming purposes. This definition does not preclude the use of paper based processes to support ePrescribing activity."

For the purposes of this ePrescribing release, a prescription is a precise written order or instruction, issued by a general medical practitioner or specialist with prescribing authority, authorising a pharmacist or other dispenser to supply a specific prescribable item for a subject of care, and providing instructions for the preparation (if necessary), use and administration of the item. The prescribable item may be a drug, appliance, dressing or reagent that is a pharmaceutical product and is included in the Australian Medicines Terminology (AMT).

2 Prescription Body

For the purposes of this release, a prescription is a precise written order or instruction, issued by a prescriber with prescribing authority, authorising a pharmacist or other dispenser to dispense one or more prescribable items for a subject of care, and providing instructions for the preparation (if necessary), use and administration of the item. The prescribable item may be a drug, appliance, dressing or reagent that is a pharmaceutical product.

The body of the prescription contains the information regarding the items prescribed for the subject of care, instructions on how those items should be administered and instructions for dispensing the items, as represented in the binding model in 2.2.

2.1 Source and Version

All data elements in this document relate to the "Prescription" data group within the Prescription Body as described in the ePrescribing – General Practitioner to Community Pharmacist Structured Document Template.

All developed reference sets referred to in this document are sourced either from SNOMED CT January 2009 release or the Australian Medicines Terminology (AMT). As AMT adds new products in each monthly release, the AMT references sets will also be released monthly to incorporate any new or changed content.

In order to gain further understanding of how AMT is modelled and the approach used in developing reference sets, refer to the following published documents:

- *Australian Medicines Terminology UML Class Diagram*
- *Australian Medicines Terminology Editorial Rules*
- *Australian Medicines Terminology Technical Specifications*
- *Australian Medicines Terminology Reference Set Approach*

Refer to the Release Note for links to the location of these documents.

NEHTA will also identify and recommend existing standards for administrative (non-clinical) terminology that will be required to populate the electronic message profile e.g. HL7.2x.

Data content and terminology development are areas of work that are subject to ongoing revision.

2.2 Binding Model

The following model illustrates the "Prescription Body" section of the message, and the relationships between the relevant data groups and data elements in this section of the message, the data elements requiring terminology for which reference sets are to be developed, and the value domains for developed reference sets stipulating the source of permissible values (e.g. SNOMED CT, AMT).

Please refer to the ePrescribing – General Practitioner to Community Pharmacist Structured Document Template for further information on the data hierarchy.

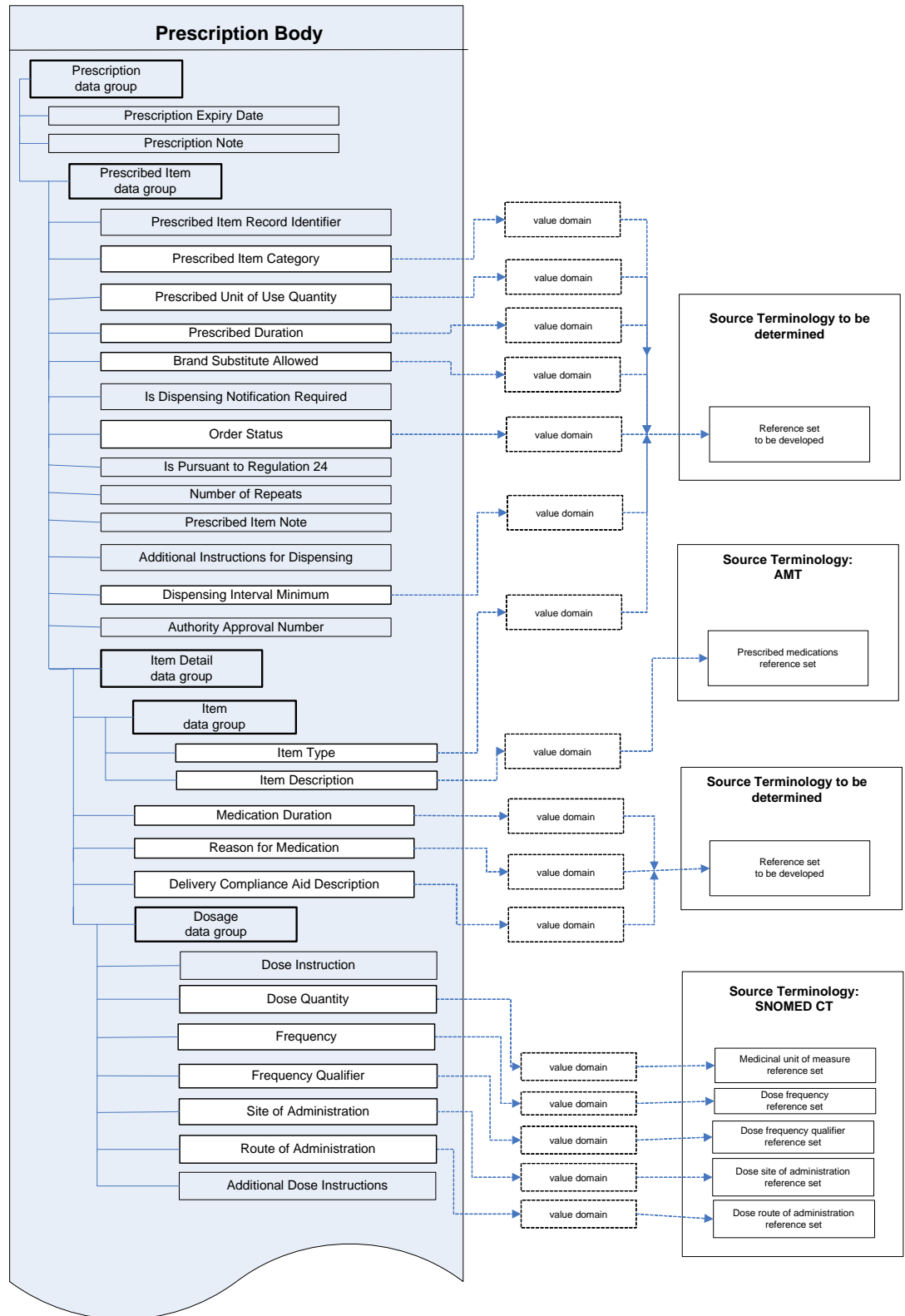


Figure 2: Binding reference sets to data content specifications

2.3 Use Cases

Prescriptions may take several forms depending on the items being prescribed and the issuing prescriber. Some use cases demonstrating these variations are outlined in the Structured Document Template. Each of these use cases contain 3 components, as follows:

1. A text description of a use case describing a particular condition and the items which would be prescribed to treat that condition;
2. An example paper prescription showing how those items may be prescribed; and
3. A graphical representation showing how those items on the prescription relate to the data elements in the SDT.

Please refer to the ePrescribing – General Practitioner to Community Pharmacist Structured Document Template to view these use cases.

Refer to the Release Note for links to the location of these documents.

3 Data Group – Prescribed Item

3.1 Scope

The items in scope for this release of e-Prescribing are the following:

- Items on the PBS;
- Items on the RPBS; and
- TGA Registered items.

Additional items will be included as priorities dictate.

3.2 Definition

As shown in the Binding Model in 2.2, the “Prescribed Item” data group forms part of the “Prescription” data Group within the “Prescription Body” .

The “Prescribed Item” data group contains a detailed description of a single medicinal product or device that is listed as an item within a prescription

3.3 Development status

The following table indicates the reference set development status for data elements contained in “Prescribed Item” data group that require use of terminology. This terminology may be sourced from AMT, SNOMED or an existing standard may be recommended.

Table 1: Prescribed Item data group development status

Child Data Element	Reference Set Development Status
Prescribed Item category (DE-16015) Value Domains: PBS, RPBS, Private Prescription	For scheduling
Prescribed Unit of Use Quantity (DE-10145) Examples: 40 tablets, 10 vials	For scheduling
Prescribed Duration (DE-10143) Examples: 10 days, 2 weeks	For scheduling
Brand Substitution Allowed (DE-10107) Proposed Value Domain: HL7 2.5 Table 0161 Examples: 10 days, 2 weeks	For scheduling
Order Status (DE-16016) Example: G = Allow generic substitutions	For scheduling
Dispensing Interval Minimum (DE-10174) Example: 20 Days	For scheduling

For more information on these data elements refer to ePrescribing – General Practitioner to Community Pharmacist Structured Document Template.

4 Data Group –Item Detail

4.1 Scope

The data elements within this data group are relevant for use in medication profiles relating to the subject of care – e.g., a current medications list.

4.2 Definition

As shown in the Binding Model in 2.2, the “Item Detail” (DG-10120) data group forms part of the “Prescribed Item” data group (DG-10103) within the “Prescription Body” section of the ePrescriptions message.

Details to be specified include a description of the item, how long the subject of care has been taking the item, the reason for prescribing the item and the dosage which should be administered.

4.3 Development status

The following table indicates the reference set development status for data elements contained in “Item Detail” data group that require use of terminology. This terminology may be sourced from SNOMED or an existing standard.

Table 2: Item Detail data group development status

Child Data Element	Reference Set Development Status
Item Data Group (DG-16003)	Refer to Item Data Group
Medication Duration (DE-10143) Example: 3 months	For scheduling
Reason for Medication (DE-10141) Example: Long-term maintenance treatment of bronchospasm and dyspnoea	For scheduling
Delivery Compliance Aid Description (DE-10151) Example: Webster Pack	For scheduling

For more information on these data elements refer to EPrescribing – General Practitioner to Community Pharmacist Structured Document Template.

5 Data Group – Item

5.1 Scope

The primary scope for this data group in this release is to represent clinical information requirements associated with the description of a prescribed medication for a subject of care to support message specifications.

Items may be medicinal or non-medicinal. The common factor is that they must be capable of being prescribed. This data group therefore allows for a description of the item and a category to represent what type of item it is.

The scope of this release is medicinal items only, with the exception of some non-medicinal items listed on the Pharmaceutical Benefits Scheme (PBS).

5.2 Definition

As shown in the Binding Model in 2.2, the “Item” data group (DG-16003) forms part of the “Item Detail” data group (DG-10120) within the “Prescription Body” section of the ePrescriptions message.

The “Item” data group contains a detailed description of a single medicinal product or device that is listed as an item within a prescription.

5.3 Development status

The following table indicates the reference set development status for data elements contained in “Item” data group that require use of terminology.

Table 3: Item data group development status

Child Data Element	Reference Set Development Status
Item Type (DE-16004) Value Domain: Medicinal, Non-medicinal	For scheduling
Item Description (DE-10194)	Prescribed Medications Reference Set - Draft developed

For more information on these data elements refer to ePrescribing – General Practitioner to Community Pharmacist Structured Document Template.

5.4 Reference Set – Prescribed Medications

5.4.1 Reference Set Usage

The reference set is used to describe medications available to be prescribed during an encounter. The medication described is constrained to medicines available in the Australian Medicines Terminology (AMT) for prescription by a healthcare professional.

When prescribers are describing a medication, they may do so at differing levels of specificity, depending upon the clinical context, the healthcare setting, the type of medication being prescribed, their knowledge of specific drugs, the functionality of their prescribing system and other factors.

This reference set is designed to carry a term or description from a terminology which may include form, active ingredients and strength and may also include pack size as part of the term (if applicable).

5.4.2 Permissible Values

The following table illustrates some examples of the permissible values drawn from the AMT "Australian product" hierarchy.

Table 4: Examples of permissible values

AMT Concepts	AMT Concept ID #
<i>Amoxicillin 250 mg tablet</i> (medicinal product unit of use)	22048011000036105
Amoxicillin 250 mg tablet, 20 (medicinal product pack)	26642011000036101
Amoxil (amoxicillin (as trihydrate) 250 mg) tablet: chewable, 1 tablet (trade product unit of use)	5310011000036103
Amoxil 250 mg tablet: chewable, 20 tablets (trade product pack)	11421011000036105
Amoxil 250 mg tablet: chewable, 20 tablets, bottle (containered trade product pack)	18381011000036101

For further information of the approach taken to develop this reference set, refer to the AMT Reference Set Approach Document. This document outlines the following:

- AMT hierarchies that source the data elements;
- Permissible Values;
- Reference Set usage;
- Excluded Concepts;
- Included Concepts and
- Issue Log.

To view the content of the Prescribed medications reference set, refer to the AMT Reference Set Analysis spreadsheet.

6 Data Group - Dosage

6.1 Scope

The primary scope for this data group in this release is to describe how a particular prescribable product should be administered to a subject of care.

The initial dosage release is based on a simple dose instruction. It does not cover reducing or sliding scale doses.

The Dosage terminology is an evolving body of work ultimately aiming for a high degree of machine readability.

6.2 Definition

As shown in the Binding Model in 2.2, the "Dosage" data group (DG-16007) forms part of the "Item Detail" data group (DG-10120) within the "Prescription Body" section of the ePrescriptions message.

The "Dosage" data group contains the full set of standardised dose instructions that support the correct administration of a medicinal product or device to a subject of care in order for it to have its therapeutic effect.

6.3 Development status

The following table demonstrates the terminology development status of the relevant data groups and data elements within the "Dosage" data group.

Table 5: Dosage data group development status

Child Data Element	Reference Set Development Status
Dose Quantity (DE-10152)	Medicinal Unit of Measure Reference Set – Draft Developed
Frequency (DE-10153)	Dose Frequency Reference Set – Draft Developed
Frequency Qualifier (DE-10154)	Dose Frequency Qualifier Reference Set – Draft Developed
Site of Administration (DE-10156)	Dose Site of Administration Reference Set – Draft Developed
Route of Administration (DE-10147)	Dose Route of Administration Reference Set – Draft Developed

For more information on these data elements refer to ePrescribing – General Practitioner to Community Pharmacist Structured Document Template.

6.4 Dosage Reference Sets

6.4.1 Reference Set Usage

The full meaning of the dosage message can be communicated by combining the free text data element "additional instructions", with the data elements "dose quantity", "frequency", "frequency qualifier", "site of administration" and "route of administration" combining free text with coded data elements for simple dosage messages.

Further understanding will be derived from the nature of the type selected e.g. the Medicinal Product Pack (MPUU) would further clarify the strength of the medication and the dosage form ordered. (See Table 6 below).

Table 6: Example of Dosage instruction using (MPUU)

Item description	Dose quantity	Frequency	Frequency qualifier	Route of administration
Amoxicillin 500 mg capsule	1 capsule	three times daily	until all taken	oral

This will be represented in the free text box as:

Amoxicillin 500 mg capsules, 1 capsule three times daily until all taken oral.

For further information on the approach taken to develop these reference sets, refer to Dosage Terminology Approach Document.doc. This document outlines the following:

- SNOMED CT hierarchies that source the data elements;
- Permissible Values;
- Reference Set usage;
- Excluded and Included Concepts and
- Issue Log.

To view the content of the dosage reference sets, refer to the Dosage Terminology Reference Set Analysis spreadsheet.

7 Release Format

Reference sets are available in the form of distribution files and a viewer that allows permissible values to be viewed in the context of the applicable SNOMED CT hierarchy.

AMT values will be available in a separate viewer as currently the AMT and SNOMED CT exist as stand-alone terminologies.

Both Dosage and AMT Reference Sets are also available in an alternate format - Excel spreadsheets that lists the permissible values (i.e. relevant SNOMED-CT or AMT concepts).

For this release, only the Excel spreadsheet will be available to view AMT Reference Sets. The AMT Viewer and Reference Set distribution files will be released, along with AMT, in the future.

These files and the terminology viewers are available in a downloadable form from the secure NEHTA website. Interested stakeholders will be required to have licenced SNOMED CT through NEHTA prior to obtaining it for review.

SNOMED Clinical Terms[®] is now freely available for e-health software developers to use in their Australian products under IHTSDO licensing arrangements.

For more information, please refer to the *SCT-AU Terminology Viewer Installation Guide and Manual* available at <https://nehta.org.au/aht>.

Refer to the Release Note for links to the location of these documents.

8 References

[REF]	Document Name	Publisher	Repository
[AS4700.3-2007]	Interim Australian Standard Implementation of Health Level Seven (HL7) Version 2.5 Part 3: Electronic messages for exchange of information on drug prescription	Standards Australia	http://www.saiglobal.com/online/ Accessed 8 September 2008
[KPMG-2008]	Consultancy in Electronic Prescribing & Dispensing of Medicines (ePrescribing), Final Report, June 2008	KPMG	http://www.health.gov.au/inter-net/main/publishing.nsf/Content/80B878329CD34C6ACA25715700229B28/\$File/DOHA08-ePrescribing%20report-Final290708.pdf