NHS Connecting for Health	**SCG Guidance on the Use of Specific Medication NHS Message Templates**			
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SCG Guidance on the Use of Specific Medication NHS Message Templates

Amendment History:

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0.2	21.01.08	2nd draft following minor amendments and clarification of audience, medication types and exclusions
0.3	21.03.08	3rd draft following wider internal review and inclusion of XML templated examples
0.4	17.04.08	4th draft incorporating comments from wider internal review
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Reviewers:

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Distribution:

All system suppliers building functionality to support clinical message domains.

Document Status:

This is a controlled document.

Whilst this document may be printed, the electronic version maintained in FileCM is the controlled copy. Any printed copies of the document are not controlled.

Related Documents:

These documents will provide additional information.

Ref no	Doc Reference Number	Title	Version
1	NPFIT-SHR-QMS-PRP-0015	Glossary of Terms Consolidated.doc	13
2	NPFIT-FNT-TO-DPM-0737	NPFIT-ELIBR-AREL-P1R2-0178 Technical Guidance for Implementation of Templated CDA Domains	1.1
3	NPFIT-EP-DB-0007	NPFIT-ELIBR-AREL-DST-0034 Representation in Electronic Patient Records of Allergic Reactions, Adverse Reactions, and Intolerance of Pharmaceutical Products	1.5
4	NPFIT-FNT-TO-SCG-0001	SCG Guidance on the Representation of Allergies and Adverse Reaction Information Using Templates	1.0
5	NPFIT-NCR-DES-0540	NPFIT-ELIBR-AREL-P1R2-0050 Provision of Care Medication Rules for P1R2 (Builds 1-3)	1.0
6	NPFIT-EP-DB-0010.08	ePrescribing Functional Specification for NHS Trusts	v1.0
7	NPFIT-ELIBR-AREL-P1R2-0177	Message Implementation Manual	6.3 series

8	NPFIT-ELIBR-AREL-P1R2-0179	Message Implementation Manual	7 series
9	www.cap.org/apps/docs/snomed/documents/snomed_ct_user_guide.pdf	Snomed CT User Guide	4.8
10	www.ihtsdo.org/fileadmin/user_upload/Docs_01/Technical_Docs/abstract_models_and_representational_forms.pdf	Snomed CT Representational Forms	2.3, 2.5.6
11	NPFIT-NCR-DES-0135	NHS Care Record Elements	3.0
12	HL7	Using SNOMED CT in HL7 Version 3; Implementation Guide, Release 1.3	1.3
13	NPFIT-ELIBR-AREL-DST-0122	Sealed Envelopes Supplier Requirements Documentation	4.0

Glossary of Terms:

List any new terms created in this document. Mail the NPO Quality Manager to have these included in the master glossary above [1].

Term	Acronym	Definition
Clinical Document Architecture	CDA	An XML vocabulary designed to provide an exchange model for clinical documents such as discharge summaries and progress notes
Message Implementation Manual	MIM	Manual providing information for messaging requirements for implementation
Care Record Element	CRE	
Systemized Nomenclature of Medicine Clinical Terms	SNOMED CT	A single unified terminology to underpin the development of the integrated electronic patient record by providing an essential building block for a common computerized language for use across the world.
Common Message Element Type	CMET	Intended to express a common, reusable pattern
Electronic Transmission of Prescriptions	ETP	ETP will allow prescriptions to be generated by GPs (and other primary care prescribers) and then transferred between prescriber, community pharmacist and the Prescription Pricing Authority.
Personal Spine Information Service	PSIS	The PSIS will be the central database containing clinical records on each NHS patient. The PSIS record provides an up to date summary of information and key events in a patients life and care, drug allergies, operations, conditions, medication history – as well as details of contacts with care providers.
NHS Dictionary of Medicines and Devices	NHS dm+d	The dm+d is a vocabulary dictionary containing unique identifiers and associated textual descriptions for medicines and medical devices.

Contents

1 Purpose

This guidance is designed to provide detailed technical information on the representation of medications when using NHS message templates.

This issue of the guidance is aimed at MIM 6.3.01 clinical domains, i.e. Inpatient Discharge, Emergency Department and Outpatient sections of the Personal Spine Information Service (PSIS) Clinical Document Architecture (CDA).

N.B. Where a HL7 RMIM / model or any other Message Implementation Manual (MIM) artefact is shown this may not be the latest version of that artefact and the relevant version of the MIM should be consulted for the actual artefact version to implement.

Due to the complexity of diagrams contained within this document it is recommended the reader views the document at 150% or larger.

1.1 Definitions

Where used in this document set, the keywords **must** , **should**, **may**, **must not** and **should not** are to be interpreted as described in RFC 2119.[1]

- **Must** : This word, or the terms "**required**" or "**shall**", means that the definition is an absolute requirement of the specification
- **Should**: This word, or the adjective "**recommended**", means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications **must** be understood and carefully weighed before choosing a different course.
- **May**: This word, or the adjective "**optional**", means that an item is truly optional. One implementer may choose to include the item because a particular implementation requires it, or because the implementer feels that it enhances the implementation while another implementer may omit the same item. An implementation which does not include a particular option **must** be prepared to interoperate with another implementation which does include the option, perhaps with reduced functionality. In the same vein, an implementation which does include a particular option **must** be prepared to interoperate with another implementation which does not include the option (except of course, for the feature the option provides).
- **Must not**: This phrase, or the phrase "**shall not**" mean that the definition is an absolute prohibition of the specification.
- **Should not**: This phrase, or the phrase "**not recommended**" mean 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.

[1] http://www.faqs.org/rfcs/rfc2119.html

1.2 Further Enquiries

Enquiries about the contents of this document, or any of the requirements within it should be sent to nhscfh.scg@nhs.net.

The Standards Consulting Group (SCG) information is posted at http://www.connectingforhealth.nhs.uk/systemsandservices/data/scg.

2 Audience

This guidance is aimed at all system suppliers building functionality to support Clinical Message Domains, specifically those specified in MIM 6.3.01: Inpatient Discharge, Emergency Department and Outpatient.

3 Background

The message template mechanism used with the NHS CFH templated CDA implementation is based on the modular approach first used in GP Summary (MIM 4.2). This was developed to tighten the rules and dependencies around the use of NHS Care Record Element types (CRE), Common Message Element Types (CMETs) and SNOMED CT Subsets. This mechanism provides a more consistent approach that is easier to implement.

The message templates used in the CDA implementation take the place of the CMETs used in GP Summary and although the approach differs somewhat the aim is still the same.

Using message templates allows for greater extensibility and consistency of the messages / documents than CMETs allowed.

A library of message templates will be maintained by NHS CFH to meet new requirements and will be published in the MIM.

The same templating mechanism is used in both CDA and non-CDA based domains (that utilise the NHS CFH templates) and therefore this guidance document applies equally to message template usage in both styles of interaction. A brief template description from the NHS Connecting for Health perspective is documented in the SCG Guidance on the Representation of Allergies and Adverse Reaction Information Using Templates NPFIT-FNT-TO-SCG-0001.

4 Medication

4.1 Assumptions

4.1.1 Medication on PSIS

Medication will be sent to PSIS contained in a number of message types. There are to be no combined views of medication from GP Summary, Electronic Transmission of Prescriptions (ETP) and CDA (ED Reports, Discharge Reports, Outpatient Reports) on PSIS.

4.1.2 Purpose of Coded Medication

The initial purpose of coded medication is to allow receivers of this information to machine process this information. This facilitates the production of medication views (sorting and filtering), drug decision support, and secondary use data.

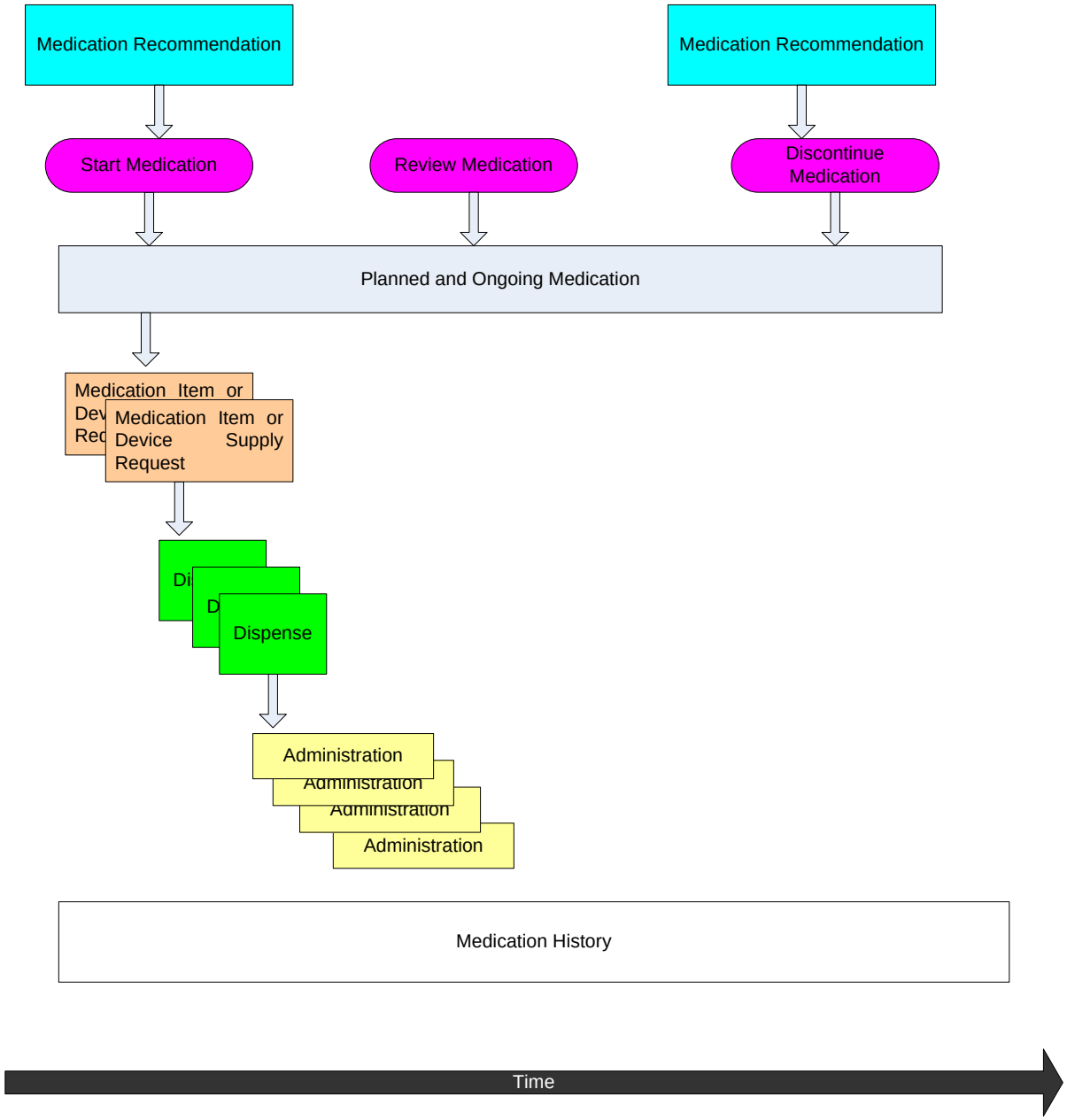
4.2 Medication and CDA

Medication can occur in a number of places in the CDA documents. Each of these items of medication can be characterised as having a number of types. The medication rules document[2] defines these types of medication.

4.3 Medication Types

The following description of medication types is derived from the previously distributed document (as referenced in section 4.2 above). The content has been edited to ensure it is compatible with the current spine functionality.

[2] NPFIT-NCR-DES-0540 – Provision of Care Medication Rules for P1R2 (Builds 1-3)



Planned or Ongoing Medication

A Planned or Ongoing Medication embodies the medication a patient is intended to be taking. As a plan it may be partially instantiated by a number of prescription requests, but not completed until discontinued or the duration has expired, where one is defined.

As such, a Planned or Ongoing Medication is not the action of an administration or request to supply, but the intention that the patient should be on a particular medication for an interval of time, usually open ended (until changed or stopped) in the case of chronic disease management. Intention, as used here, is defined as commitment to action.

Medication Item or Device Supply Request

A Medication/Device Supply Request applies to a Planned or Ongoing Medication and constitutes an ‘order’ to supply the medication entity specified in the Planned or

Ongoing Medication. Optionally, it may contain the details to the patient/carer on how to administer the medication. This equates to a prescription.

Dispense

Dispense is defined as the physical handing over of patient identified medicine to a patient or patient's representative when the intended method of administration of the medicine is via the patient or a representative of the patient.

Administration

An actual administration event is the act of giving or administering the medicine, treatment or device to the patient. Administration can be achieved through the patient's own interventions, their carer's interventions or by those of healthcare professionals. Administration may also encompass a schedule of events that have occurred – e.g. the summary of administration of medication, as a single statement.

Medication Recommendation

A Medication Recommendation about a drug or device allows a suggestion to be made for starting, discontinuing, changing or avoiding items in a patient's medication record. The Medication Recommendation may be made to another clinician or directly to the patient.

Medication History (new type)

The recording of a medication previous history. This information is not required as coded information and is put into a document for narrative use only. Therefore this information should be included as text only.

4.4 Medication Type and Templates

Medication Type	Templates
Planned and Ongoing Medication	PlanMedicationAdministration
Medication Item or Device Supply Request	RequestMedicationSupply (not to be used initially) RequestMedicationAdministration
Dispense	SupplyMedication
Administration	AdministerMedicationDose AdministerMedicationCourse
Medication history	TextSection
Recommendations	TextSection

NB: NHS CRE Type "Medication Recommendations" will not be used in the initial CDA Implementation.

4.5 Medication Inclusion Principles

More detail as to the expected functionality can be found in the document **ePrescribing Functional Specification for NHS Trusts v1.0**. In particular sections General Requirements – Discharge, General Requirements - Outpatient Medicines.

4.5.1 General Principle

During the clinical episode, which a CDA document summarises, there may be a number of medication related interactions with the patient. It is not necessary for all of these to be included in the document (the exception being dispensed medications – see below). It is a clinical decision as to whether medication **should** be included or not.

The system **must** provide functionality to allow the compiler of the document, to choose which items to include or not.

The guidance which follows assumes that no local sealing of information has taken place. If sealing has taken place then the guidance given in the Sealed Envelopes Supplier Requirements Documentation NPFIT-ELIBR-AREL-DST-0122 takes preference.

4.5.2 Medication Administrations

Medications administered may or may not be included on clinical judgement. E.g. medication administered as part of an anaesthetic may or may not be included. Short courses of analgesics may or may not be included. Those included **must** use either the MedicationAdministrationDose or MedicationAdministrationCourse templates. A medication which has been administered will have been planned, prescribed and supplied. Only the medication administration should be included in the document (with the exception of the situation outlined in 4.5.4).

4.5.2.1 SpecificAdministrations

1. Medication administered, which will have effects after the patient has left the hospital/clinic, **must** be included (It is the responsibility of the clinician to ensure this occurs). E.g. Thrombolytics, antibiotics and drugs with a high likelihood of side effects. These **must** use either the MedicationAdministrationDose or MedicationAdministrationCourse templates.
2. Drugs administered, which have elicited an allergic reaction or an adverse drug reaction, **must** be included (along with an allergy/allergic reaction event record and propensity if required).

4.5.3 Dispensed Medications

1. All medications dispensed to the patient, to be taken outside the clinic/hospital, **must** be included. These **must** use the SupplyMedication template.
2. All medications prescribed to a patient, but not as yet dispensed (this includes medications prescribed and to be dispensed at an external pharmacy), **must** be included. These **must** use the RequestMedicationAdministration template.
3. A medication which has been dispensed will have been planned and prescribed. Only the medication supply should be included in the document (with the exception of the situation outlined in 4.5.4)

4.5.4 Planned Medications

1. Hospitals or Clinics may manage the ongoing prescribing and/or supply of certain medications to patients. Where this is the case a record of this **must** be

included. A plan **must** be populated (PlanMedicationAdministration **must** be used) and all dispensed medication **must** have an appropriate SupplyMedication template which links back to the plan.

2. The Plan **must** be restated for each document which includes either a medication review or dispensing event.
3. When a medication is discontinued, the MedicationDiscontinuation template **must** be used. So in the document that describes the event in which an ongoing medication managed by the hospital/clinic is stopped, then there **must** be a PlanMedicationAdministration template with a MedicationDiscontinuation template. Once a PlanMedicationAdministration has been discontinued, it cannot be reinstated. If a medication is re-started by a Clinician a new plan **must** be created.

4.5.5 Prescriptions

Where a medication is prescribed to the patient but not dispensed, in the example of a medication to be dispensed outside the hospital, then this **must** be included. The RequestMedicationAdministration template **must** be used.

4.6 Legal Status, Authors, Location Etc

The templates detailed above are used to record medication events, they are not to support medication order communication:

1. There is no support for creation of a prescription which can be legally prescribed against. There is no support for digital signatures.
2. It is reasonable in these documents for medication to inherit authorship from the document
3. Locations can be specifically stated against individual medication items, but this is not expected
4. Informants are allowable in medication templates. It is not expected that these will be used. Where the informant is a relative or the patient then it is recommended that Medication History is used rather than a coded template.

4.7 Use of Specific Medication Templates

This section gives specific guidance for the use of the medication templates in CDA documents.

Note. In a number of areas below it is noted that information may be populated in a specific structure in the template – or it may form part of the document text. Please note that all structured/encoded information also must be included as part of the document text.

4.7.1 PlanMedicationAdministration

4.7.1.1 AdminstrationSnCT

This template is used to represent planned medication. This means that the code **must** have the context of "planned". [3]

It is recommended that the code 225426007|administration of therapeutic substance| is used. Other codes in the subset (subset original id 1311000000134) may be used, but which ever is used **must** have the context of "planned".[4]

This can be achieved in one of 2 ways

```
<code code="405613005" displayName="planned procedure" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
        <originalText>
                <reference value="#a3"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="225426007" displayName=" administration of therapeutic substance"/>
        </qualifier>
</code>
```

Post coordinating using the code 405613005|planned procedure|.

Or explicitly including procedure context in the expression

[3] Following the guidance in "Using SNOMED CT in HL7 Version 3; Implementation Guide, Release 1.3" The code phrase used here **must** be compatible with the mood code – INT. As this template represents a planned medication the code phrase is constrained further still to have the context "planned".

[4] i.e that means the code phrase must have a SNOMED CT procedure context value of 397943006 | Planned, either explicit in the communicated expression or recoverable from the reference modelling of an appropriate pre-coordinated SNOMED CT Concept.

```
<code code="243796009" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="situation with explicit context">
        <originalText>
                <reference value="#a1"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="225426007" displayName="administration of therapeutic substance"/>
        </qualifier>
        <qualifier>
                <name code="408730004" displayName="procedure context"/>
                <value code="397943006" displayName="planned"/>
        </qualifier>
</code>
```

Route of administration **may** be included as part of the SNOMED CT phrase. In many cases the route of administration can be inferred from the form of the product e.g. oral suspension. If this is not the case, or the substance is being administered in a way other than the substance describes then the route of administration must be included in the dosage instructions.

Post coordinating using the code 405613005|planned procedure|

```
<code code="405613005" displayName="Planned procedure" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
        <originalText>
                <reference value="#a3"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="Associated procedure"/>
                <value code="225426007" displayName=" Administration of therapeutic substance">
                        <qualifier>
                                <name code="410675002" displayName="route of administration"/>
                                <value code="112239003" displayName=" by inhalation"/>
                        </qualifier>
                </value>
        </qualifier>
</code>
```

Or explicitly including procedure context in the expression

```
<code code="243796009" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="situation with explicit
context">
        <originalText>
                <reference value="#a1"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="225426007" displayName="administration of therapeutic substance">
                        <qualifier>
                                <name code="410675002" displayName="route of administration"/>
                                <value code="112239003" displayName=" by inhalation"/>
                        </qualifier>
                </value>
        </qualifier>
        <qualifier>
                <name code="408730004" displayName="procedure context"/>
                <value code="397943006" displayName="planned"/>
        </qualifier>
</code>
```

4.7.1.2 SupplySnCT

The PlanMedicationAdministration template has an optional act to support the quantity of medication to be supplied and the number of repeat supplies

allowable. This act uses the code 373784005|dispensing medication| (subset SupplySnCT) this **must** have the context of "planned".[5]

Either

```
<code code="405613005" displayName="planned procedure" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
        <originalText>
                <reference value="#a3"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="373784005" displayName=" dispensing medication"/>
        </qualifier>
</code>
```

Post coordinating using the code 405613005|planned procedure|.

```
<code code="243796009" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="situation with explicit
context">
        <originalText>
                <reference value="#a1"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="373784005" displayName="dispensing medication"/>
        </qualifier>
        <qualifier>
                <name code="408730004" displayName="procedure context"/>
                <value code="397943006" displayName="planned"/>
        </qualifier>
</code>
```

Or explicitly including procedure context in the expression

4.7.1.3 Repeat Number

This is used to identify the number of repeat supplies allowed. Where the maximum number of repeat issues is required to be represented this attribute **must** be used

The low value can be used to represent the minimum number of allowable repeats (this is of little or no value in practice)

The high value **must** be used to represent the maximum number of repeats allowable.

NB. The Tabular view in MIM 6.3 states that "If only the maximum number of supplies is carried then

- The *center* attribute shall contain the maximum number of supplies.

This is incorrect in this situation the high attribute **must** be used.

[5] i.e that means the code phrase must have a SNOMED CT procedure context value of 397943006 | Planned , either explicit in the communicated expression or recoverable from the reference modelling of an appropriate pre-coordinated SNOMED CT Concept

```
<repeatNumber>
        <low nullFlavor="NA"/>
        <high value="5"/>
</repeatNumber>
```

For example

Not

```
<repeatNumber>
        <center value="5"/>
</repeatNumber>
```

4.7.1.4 Effective Time

The effective time attribute of the PlanMedicationAdministration act **must** be used. The start date **must** be the date that the administration is planned to or did actually start. The end date is optional and used to indicate when the administration is planned to, or actually has ended.

The effective time of the SupplyMedication act **should** contain the date the next supply is intended to occur.

4.7.1.5 MedicationDiscontinuation

MedicationDiscontinuation – there is an optional reference to the MedicationDiscontinuation template (see below for detail on how this should be used)

4.7.1.6 Dosage Instructions

Dosage Instructions - these **must** be populated in human readable text. The specific dosage instructions **must** be included here, the quantity of medication to be given/taken, the frequency and any time limitations. The route of administration **must** be included if not included in AdministrationSnCT, and can not be inferred from the substance description.

4.7.1.7 Additional Instructions

Additional Instructions – this act is optional, and used for further instructions. This **should** include instructions as to how the patient is to obtain further medication. This may for example state, “patient will be seen in clinic prior to a new supply being authorised”, or to “contact the outpatient clinic for a repeat prescription” on a specific telephone number.

4.7.1.8 Last Medication Review

Last medication review – date the medication was last reviewed.

4.7.1.9 Next Medication Review

Next medication review – date of the next medication review.

4.7.1.10 Reason For Medication

Reason for Medication – an optional reference to another template to record reason for medication. This can be used; however the reason for a specific medication can also be carried in the text of the document.

4.7.1.11 Author

This could be inherited from the document or be specifically identified here.

4.7.2 RequestMedicationAdministration

4.7.2.1 AdministrationSnCT

This template is used to represent requested medication. This means that the code **must** have the context of "requested". [6]

It is recommended that the code 225426007|administration of therapeutic substance| is used. Other codes in the subset (subset original id 1311000000134) may be used, but which ever is used **must** have the context of "requested". [7]

This can be achieved in one of 2 ways

Post coordinating using the code 400999005|procedure requested|

```
<code code="400999005" displayName="procedure requested"
codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
        <originalText>
                <reference value="#a3"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="225426007" displayName=" administration of therapeutic substance"/>
        </qualifier>
</code>
```

Or explicitly including procedure context in the expression

```
<code code="243796009" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="situation with explicit
context">
        <originalText>
                <reference value="#a1"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="225426007" displayName="administration of therapeutic substance"/>
        </qualifier>
        <qualifier>
                <name code="408730004" displayName="procedure context"/>
                <value code="385644000" displayName="requested"/>
        </qualifier>
</code>
```

[6] Following the guidance in "Using SNOMED CT in HL7 Version 3; Implementation Guide, Release 1.3" The code phrase used here **must** be compatible with the mood code – RQT. As this template represents a requested medication the code phrase is constrained further still to have the context "requested".

[7] i.e that means the code phrase must have a SNOMED CT procedure context value of 385644000 | Requested, either explicit in the communicated expression or recoverable from the reference modelling of an appropriate pre-coordinated SNOMED CT Concept.

Route of administration **may** be included as part of the SNOMED CT phrase. In many cases the route of administration can be inferred from the form of the product e.g. oral suspension. If this is not the case, or the substance is being administered in a way other than the substance describes then the route of administration must be included in the dosage instructions.

Post coordinating using the code 400999005|procedure requested|

```
<code code="400999005" displayName="procedure requested" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
        <originalText>
                <reference value="#a3"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="Associated procedure"/>
                <value code="225426007" displayName="Administration of therapeutic substance">
                        <qualifier>
                                <name code="410675002" displayName="route of administration"/>
                                <value code="112239003" displayName="by inhalation"/>
                        </qualifier>
                </value>
        </qualifier>
</code>
```

Or explicitly including procedure context in the expression

```
<code code="243796009" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="situation with explicit
context">
        <originalText>
                <reference value="#a1"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="225426007" displayName="administration of therapeutic substance">
                        <qualifier>
                                <name code="410675002" displayName="route of administration"/>
                                <value code="112239003" displayName=" by inhalation"/>
                        </qualifier>
                </value>
        </qualifier>
        <qualifier>
                <name code="408730004" displayName="procedure context"/>
                <value code="385644000" displayName="requested"/>
        </qualifier>
</code>
```

4.7.2.2 SupplySnCT

The RequestMedicationAdministration template has an optional act to support the quantity of medication to be supplied and the number of repeat supplies allowable. This act uses the code 373784005| dispensing medication (subset SupplySnCT). This code **must** have the context “planned”.

Either

Post coordinating using the code 405613005|planned procedure|.


```
<code code="405613005" displayName="planned procedure" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
        <originalText>
                <reference value="#a3"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="373784005" displayName=" dispensing medication"/>
        </qualifier>
</code>
```

Or explicitly including procedure context in the expression

```
<code code="243796009" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="situation with explicit
context">
        <originalText>
                <reference value="#a1"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="373784005" displayName="dispensing medication"/>
        </qualifier>
        <qualifier>
                <name code="408730004" displayName="procedure context"/>
                <value code="397943006" displayName="planned"/>
        </qualifier>
</code>
```

4.7.2.3 RepeatNumber

This is used to represent which repeat number in a sequence a particular request for administration is. E.g. 2 of a maximum 6. Repeat number **must** be used when the place in a sequence of repeats is required to be represented.

N.B. The MIM tabular view here is incorrect.

The low attribute **must** be used to represent the number in a sequence (must always be an integer)

The high attribute **must** be used to represent the maximum number of allowable repeats

4.7.2.4 Dosage Instructions

Dosage Instructions - these **must** be populated in human readable text. The specific dosage instructions **must** be included here, the quantity of medication to be given/taken, the frequency and any time limitations. The route of administration **must** be included if not included in AdministrationSnCT or can not be inferred from the substance description.

4.7.2.5 Acute Script Flag

Acute Script Flag – **must** be used. This flag denotes that this medication request is a one off request.

4.7.2.6 Reason for Medication

Reason for Medication – an optional reference to another template to record reason for medication. This **may** be used; however the reason for a specific medication **may** also be carried in the text of the document.

4.7.3 SupplyMedication

The SupplyMedication template allows the recording of supply instructions. These supply instructions **must** also include the dosage instructions.

4.7.3.1 SupplySnCT

SupplySnCT – the code used here **should** be 373784005|dispensing medication| [8]

4.7.3.2 DaysSupply/MedicationQuantity

This attribute is used to record the number of days or quantity of medication supplied. Either of these **must** be used.

4.7.3.3 Optional reference – to PlanMedicationAdministration

This would be used when the Hospital/Clinic is managing an ongoing medication (see 4.7 sub section 4.7.1 above) and this medication is supplied during the particular visit.

[8] There is no requirement for context modification here as default context “done” is used.

4.7.4 MedicationAdministrationDose.

When detailing the administration of a medication then the MedicationAdministrationDose template **should** be used if a single administration occurs. When a medication course (a course being defined as more than one distinct medication administration, a continuous infusion is in this case considered to be a single dose) is being recorded then the MedicationAdministrationCourse template **should** be used. This allows the summarisation of multiple administrations without the need to detail the date and time of each actual administration. This requires the description of the dose schedule and the start and stop date (use open ended if to continue)

4.7.4.1 AdminstrationSnCT

Any code from the subset can be used here; however it is recommended that the code 225426007|administration of therapeutic substance| is used. If the medication was stopped or abandoned then the code **must** be context modified. Use context modifiers 385657008|abandoned| or 385655000|suspended|.

Example using the SNOMED CT Context Model

```
<code code="243796009" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="situation with explicit context">
        <originalText>
                <reference value="#a1"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="225426007" displayName="administration of therapeutic substance"/>
        </qualifier>
        <qualifier>
                <name code="408730004" displayName="procedure context"/>
                <value code="385657008" displayName="abandoned"/>
        </qualifier>
</code>
```

Route of administration **may** be included as part of the SNOMED CT phrase. If it is not included here it **must** be included in the AdministrationDetails.

Example of Route of Administration

```
<code code="225426007" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="administration of therapeutic substance ">
        <originalText>
                <reference value="#a1"/>
        </originalText>
        <qualifier>
                <name code="410675002" displayName="route of administration"/>
                <value code="112239003" displayName="by inhalation"/>
        </qualifier>
</code>
```

Example of Route of Administration and SNOMED CT Context model

```
<code code="243796009" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="situation with explicit
context">
        <originalText>
                <reference value="#a1"/>
        </originalText>
        <qualifier>
                <name code="363589002" displayName="associated procedure"/>
                <value code="225426007" displayName="administration of therapeutic substance">
                        <qualifier>
                                <name code="410675002" displayName="route of administration"/>
                                <value code="112239003" displayName=" by inhalation"/>
                        </qualifier>
                </value>
        </qualifier>
        <qualifier>
                <name code="408730004" displayName="procedure context"/>
                <value code="385657008" displayName="abandoned"/>
        </qualifier>
</code>
```

N.B. context modification with 385660001|not done| **must not** be represented (this could be included as text if required). E.g. a document **must** not include a MedicationAdministrationDose template when administration of streptokinase was not done. Text of the document can state that this was not given and why.

4.7.4.2 Effective Time

The effective time of the MedicationAdministrationDose act **should** carry the date/time that the medication administration took place. This could either be a range (for drug infusions) or a single date for stat administrations

4.7.4.3 Optional reference – to PlanMedicationAdministration

This would be used when the Hospital/Clinic is managing an ongoing medication see 4.7 sub section 4.7.1 above) and this medication is administered during the particular visit.

4.7.4.4 Reason for Medication

This is an optional reference to another template to record reason for medication. This **may** be used; however the reason for a specific medication **may** also be carried in the text of the document.

4.7.4.5 ReasonForStoppingMedication

An optional reference when the medication administration was abandoned or suspended. This **may** be used; however the reason for a specific medication **may** also be carried in the text of the document.

4.7.4.6 MedicationQuantity

Used to state the quantity of medication administered. For MedicationAdministrationDose this is the quantity administered. This **must** be used.

E.g. 2 tablets or 40mg.

4.7.4.7 AdministrationDetails

The dose details of the medication administered. The route the medication was given. This **must** be used.

E.g. oral, intravenous infusion, intramuscular injection, intravenous push.

In the case of a continuous infusions the time over which the continuous infusion is given **must** be stated.

4.7.4.8 Abandoned or suspended administrations

Administrations which are abandoned or suspended must use MedicationQuantity to detail the actual quantity of medication given to the patient. The reason for suspension or abandonment and the intended quantity must be populated into AdministrationDetails.

4.7.5 MedicationAdministrationCourse.

When detailing the administration of a medication then MedicationAdministrationDose template **should** be used if a single administration occurs. When a medication course (a course being defined as more than one distinct medication administration, a continuous infusion is in this case considered to be a single dose) is being recorded then the MedicationAdministrationCourse template **should** be used. This allows the summarisation of multiple administrations without the need to detail the date and time of each actual administration. This requires the description of the dose schedule and the start and stop date (use open ended if to continue)

4.7.5.1 AdminstrationSnCT

As MedicationAdministrationDose.

4.7.5.2 Effective Time

The effective time of the MedicationAdministrationCourse act **should** carry the date/time that the medication administration took place. This **must** always contain the start date and the end date.

4.7.5.3 Optional reference – to PlanMedicationAdministration

This **may** be used when the Hospital/Clinic is managing an ongoing medication see 4.7 sub section 4.7.1 above) and this medication is administered during the particular visit.

4.7.5.4 Reason for Medication

An optional reference to another template to record reason for medication. This **may** be used; however the reason for a specific medication **may** also be carried in the text of the document.

4.7.5.5 ReasonForStoppingMedication

An optional reference used when the medication administration was abandoned or suspended. This **may** be used; however the reason for stopping a specific medication **may** also be carried in the text of the document.

4.7.5.6 DaysSupply

This attribute **may** be used to record the number of days the medication was administered for. The effective time of the MedicationAdminstrationAct will state the actual start and stop dates. This attribute will state the number of days this equates to.

4.7.5.7 MedicationQuantity

This attribute **may** be used to state the total quantity of medication administered. This is useful when recording the administration of variable dose medications.

4.7.5.8 AdministrationDetails

The dose details of the medication administered. The route the medication was given, this **must** be used. E.g. intravenously three times daily.

4.7.5.9 Abandoned and Suspended Medication Administrations

Administrations which are abandoned or suspended must use MedicationQuantity to detail the actual quantity of medication given to the patient. The reason for suspension or abandonment and the intended quantity must be populated into AdministrationDetails.

4.7.6 MedicationDiscontinuation

This template **should** only be used as a reference from the PlanMedicationAdministration template see 4.7 sub section 4.7.1 above)

4.7.6.1 Optional reference to ReasonForDiscontinuation

This may be used; however it is also reasonable to carry the reason for discontinuation as text in the document.

4.7.6.2 InformPatient

Can optionally be used; however it is also reasonable to carry this information in the text of the document.

4.7.6.3 PatientContactAttempt

Can optionally be used; however it is also reasonable to carry this information in the text of the document.

4.8 Medication History

The recording of a medication previous history. This information is **not** required as coded information and is put into a document for narrative use only. Therefore this information **should** be included as text only.

These medication entries will be included in the documents as part of the text sections.

4.9 Medication Recommendation

A Medication Recommendation about a drug or device allows a suggestion to be made for starting, discontinuing, changing or avoiding items in a patient's medication record. The Medication Recommendation may be made to another clinician or directly to the patient, these are carried as text.

Medication Recommendations form part of the actions required by either another clinician or the patient. These actions **must** be clearly identified in the document.

Each action **should** clearly identify a person or type of person (e.g. GP, District Nurse etc) who is required to carry out the action. The timescale in which the action **should** be carried out **should** also be included.

4.10 Medication Incorporation Rules

It is assumed that all information to be displayed or incorporated into systems complies with the rules defined in this document.

4.10.1 Display of the CDA document

The system must render the document for reading by a human user. The guidance on use of style sheets, previously documented in the Technical Guidance for Implementation of Templated CDA Domains NPFIT-FNT-TO-DPM-0737 (section 2.4.1.2), must be followed.

4.10.2 Processing of Medication Clinical Statements

1. When receiving medication information the system **may** allow this record to be incorporated into the local record. The clinical user **must** always initiate this process. Medication **must never** be automatically incorporated into a system.
2. The receiving system **must** be able to fully process all semantics contained in a template in order to safely incorporate the clinical information into the system. This means that the receiving system must maintain context and meaning when the information is incorporated into a local record. Systems which are unable to fully process the semantics held within a message **must not** process this information.
3. Coded templates allow medication details to be incorporated into a local record.

   RequestMedicationAdministration, MedicationAdministrationCourse/ MedicationAdministrationDose, SupplyMedication PlanMedicationAdministration.

   The templates above are designed so information **could** be incorporated into a systems list of medication which has been planned to be administered, administered dispensed, or prescribed for a patient.

4. Further human intervention is required to populate the local list of medications to be prescribed. E.g a user **may** take selected information from a medication template to pre-populate a repeat prescription entry in the receiving system. It is likely that the user will need to add or amend information to enable local prescribing to occur.

4.11 VTM Prescribing

RequestMedicationAdministration and **PlanMedicationAdministration** both allow Virtual Therapeutic Moieties (VTM) in the code attribute of the Material act (ManufacturedMaterialSnCT).

VTM codes do not contain detail regarding the form and strength of the product. Therefore when VTMs are used additional information is required. Route of administration **must** be recorded this can be carried as part of the AdministrationSnCT or as part of the dosage instructions. Form and Strength **must** be carried as part of the dosage instructions.

4.12 Exclusions and Known Issues

4.12.1 Extemporaneous Preparations

An extemporaneous preparation is a medicinal product whose use (prescribing, dispensing and/or administration) involves some element of recipe or formula preparation. This recipe of formulation **must** be present in at least one step in prescribing, dispensing and/or administration, but does **not** have to be present at all steps.

The current medication templates do not fully support the recording of extemporaneous preparations. Some extemporaneous preparations have an NHS dm+d[9] code, these **can** be included in the normal way. Other preparations **can not** be included in this way. These preparations **must** be included in the textual document (as per inclusion rules in section 2.5 above), however there will be no associated coded element.

4.12.2 Structured Dosage Representation

The current templates only support the inclusion of textual dosage instructions.

4.12.3 Repeat Number

There is currently no way of representing the repeat number of a specific supply. The templates do support the allowable numbers of repeats and the sequence number of a request. It is suggested that this is represented in the text of the document.

4.12.4 MedicationQuantity

The MedicationQuantity act mandates the use of the code 246205007|Quantity (attribute) which is strictly speaking not allowed.

[9] http://www.dmd.nhs.uk/

A Appendix 1 – Template Examples

4.13 PlanMedicationAdministration Example

```
<entry typeCode="COMP" contextConductionInd="true">
   <npfitlc:contentId root="2.16.840.1.113883.2.1.3.2.4.18.16" extension="COCD_TP146031UK04#PlanMedicationAdministration" />
   <substanceAdministration moodCode="INT" classCode="SBADM">
            <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#PlanMedicationAdministration" />
            <id root="7D616840-AE1A-11DB-9732-B18E1E0994CD" />
            <code code="405613005" displayName="Planned procedure" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
                     <originalText>
                              <reference value="#a3" />
                     </originalText>
                     <qualifier>
                              <name code="363589002" displayName="Associated procedure"/>
                              <value code="225426007" displayName=" Administration of therapeutic substance"/>
                     </qualifier>
            </code>
            <statusCode code="active" />
            <effectiveTime xsi:type="IVL_TS">
                     <low value="200801131200+0100" />
            </effectiveTime>
            <consumable typeCode="CSM">
                     <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#consumable" />
                     <manufacturedProduct classCode="MANU">
                              <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#manufacturedProduct" />
                              <manufacturedMaterial determinerCode="KIND" classCode="MMAT">
                                       <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#manufacturedMaterial" />
                                       <code code="332406008" displayName="Isotretinoin 20mg Capsule" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" />
                              </manufacturedMaterial>
                     </manufacturedProduct>
            </consumable>
            <entryRelationship typeCode="COMP" contextConductionInd="true" inversionInd="false">
                     <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship" />
                     <seperatableInd value="false" />
                     <supply moodCode="INT" classCode="SPLY">
                              <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#supplyMedication" />
                              <id root="7D616840-AE1A-11DB-9733-B18E1E0994CD" />
                              <code code="405613005" displayName="Planned procedure" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
                                       <qualifier>
                                                <name code="363589002" displayName="Associated procedure"/>
                                                <value code="373784005" displayName="dispensing medication"/>
                                       </qualifier>
                              </code>
                              <effectiveTime xsi:type="IVL_TS">
                                       <center value="20080206" />
```

```
                    </effectiveTime>
                    <repeatNumber>
                        <low nullFlavor="NA" />
                        <high value="3" />
                    </repeatNumber>
                    <quantity value="28" unit="1">
                        <translation value="28" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" code="385055001" displayName="Tablet" />
                    </quantity>
            </supply>
    </entryRelationship>
    <entryRelationship typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship1" />
            <seperatableInd value="false" />
            <observation moodCode="EVN" classCode="OBS">
                    <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#dosageInstructions" />
                    <code codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" code="DI" displayName="Dose Instructions" />
                    <value xsi:type="ST">take 2 tablets in the morning</value>
            </observation>
    </entryRelationship>
    <entryRelationship typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship2" />
            <seperatableInd value="false" />
            <observation moodCode="EVN" classCode="OBS">
                    <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#additionalInstructions" />
                    <code codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" code="AI" displayName="Additional Instructions" />
                    <value xsi:type="ST">Can only receive repeat supply from the dermatology clinic</value>
            </observation>
    </entryRelationship>
    <entryRelationship typeCode="SUBJ" contextConductionInd="true" inversionInd="true">
            <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship3" />
            <seperatableInd value="false" />
            <observation moodCode="EVN" classCode="OBS">
                    <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#lastMedicationAdministrationReview" />
                    <id root="7D616840-AE1A-11DB-9734-B18E1E0994CD" />
                    <code codeSystem="2.16.840.1.113883.2.1.3.2.4.15" code="314530002" displayName="Medication review done" />
                    <effectiveTime value="20080113" />
            </observation>
    </entryRelationship>
    <entryRelationship typeCode="SUBJ" contextConductionInd="true" inversionInd="true">
            <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship4" />
            <seperatableInd value="false" />
            <observation moodCode="INT" classCode="OBS">
                    <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#nextMedicationAdministrationReview" />
                    <id root="7D616840-AE1A-11DB-9735-B18E1E0994CD" />
                    <code codeSystem="2.16.840.1.113883.2.1.3.2.4.15" code="314529007" displayName="Medication review due" />
                    <effectiveTime value="20080323" />
            </observation>
    </entryRelationship>
    <entryRelationship typeCode="RSON" contextConductionInd="false">
            <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship6" />
```

```
                        <npfitlc:contentId root="2.16.840.1.113883.2.1.3.2.4.18.16" extension="COCD_TP147011UK03#DiagnosisRef" />
                        <seperatableInd value="false" />
                        <observation moodCode="EVN" classCode="OBS">
                                <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP147011UK03#DiagnosisRef" />
                                <id root="7D616840-AE1A-11DB-9736-B18E1E0994CD" />
                                <code nullFlavor="NA" />
                        </observation>
                </entryRelationship>
        </substanceAdministration>
</entry>

<entry typeCode="COMP" contextConductionInd="true">
        <npfitlc:contentId root="2.16.840.1.113883.2.1.3.2.4.18.16" extension="COCD_TP146011UK04#Diagnosis" />
        <observation moodCode="EVN" classCode="OBS">
                <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146011UK04#Diagnosis" />
                <id root="7D616840-AE1A-11DB-9736-B18E1E0994CD" />
                <code code="88616000" displayName="Acne Vulgaris" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" />
                <statusCode code="completed" />
                <effectiveTime value="20080113" />
        </observation>
</entry>
```

4.14 RequestMedicationAdministration Example

```
<entry contextConductionInd="true" typeCode="COMP">
        <npfitlc:contentId extension="COCD_TP146034UK04#RequestMedicationAdministration" root="2.16.840.1.113883.2.1.3.2.4.18.16" />
        <substanceAdministration classCode="SBADM" moodCode="RQO">
                <templateId extension="COCD_TP146034UK04#RequestMedicationAdministration" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                <id root="7D616840-AE1A-13DB-9732-B18E1E0994CD" />
                <code code="400999005" displayName="Procedure requested" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
                        <originalText>
                                <reference value="#a7" />
                        </originalText>
                        <qualifier>
                                <name code="363589002" displayName="Associated procedure"/>
                                <value code="225426007" displayName=" Administration of therapeutic substance"/>
                        </qualifier>
                </code>
                <statusCode code="completed" />
                <effectiveTime xsi:type="IVL_TS">
                        <low value="200801231200+0100" />
                </effectiveTime>
                <consumable typeCode="CSM">
                        <templateId extension="COCD_TP146034UK04#consumable" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <manufacturedProduct classCode="MANU">
                                <templateId extension="COCD_TP146034UK04#manufacturedProduct" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                                <manufacturedMaterial determinerCode="KIND" classCode="MMAT">
                                        <templateId extension="COCD_TP146034UK04#manufacturedMaterial" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                                        <code code="3835711000001107" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="Diflucortolone 0.1% cream 30g" />
```

```
                    </manufacturedMaterial>
                </manufacturedProduct>
            </consumable>
            <entryRelationship contextConductionInd="true" typeCode="COMP">
                <templateId extension="COCD_TP146034UK04#entryRelationship" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                <seperatableInd value="false" />
                <observation classCode="OBS" moodCode="EVN">
                    <templateId extension="COCD_TP146034UK04#dosageInstructions" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <code code="DI" codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" displayName="Dose Instructions" />
                    <value xsi:type="ST">apply thinly 1?2 times daily for 3 weeks</value>
                </observation>
            </entryRelationship>
            <entryRelationship contextConductionInd="true" typeCode="COMP">
                <templateId extension="COCD_TP146034UK04#entryRelationship4" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                <seperatableInd value="false" />
                <observation classCode="OBS" moodCode="EVN">
                    <templateId extension="COCD_TP146034UK04#acuteScriptFlag" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <code code="ASF" codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" displayName="Acute Script Flag" />
                    <value xsi:type="BL" value="true" />
                </observation>
            </entryRelationship>
            <entryRelationship contextConductionInd="true" inversionInd="false" typeCode="COMP">
                <templateId extension="COCD_TP146034UK04#entryRelationship5" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                <seperatableInd value="false" />
                <supply classCode="SPLY" moodCode="INT">
                    <templateId extension="COCD_TP146034UK04#supplyMedication" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <id root="15A74D59-BB3D-482D-A96A-D249526B4CD8" />
                    <code code="400999005" displayName="Procedure requested" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
                        <qualifier>
                            <name code="363589002" displayName="Associated procedure" />
                            <value code="373784005" displayName="Dispensing medication"></value>
                        </qualifier>
                    </code>
                    <effectiveTime xsi:type="IVL_TS">
                        <center value="20080123" />
                    </effectiveTime>
                    <quantity unit="1" value="2">
                        <translation code="418530008 " codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="Tube" value="2"/>
                    </quantity>
                </supply>
            </entryRelationship>
            <entryRelationship contextConductionInd="false" typeCode="RSON">
                <templateId extension="COCD_TP146034UK04#entryRelationship7" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                <npfitlc:contentId extension="COCD_TP147011UK03#DiagnosisRef" root="2.16.840.1.113883.2.1.3.2.4.18.16" />
                <seperatableInd value="false" />
                <observation classCode="OBS" moodCode="EVN">
                    <templateId extension="COCD_TP147011UK03#DiagnosisRef" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <id root="2CB6C3F2-19B0-48A8-945E-EE6A5D0F67B7" />
                    <code nullFlavor="NA" />
                </observation>
```

```
            </entryRelationship>
        </substanceAdministration>
    </entry>

    <entry contextConductionInd="true" typeCode="COMP">
        <npfitlc:contentId extension="COCD_TP146011UK04#Diagnosis" root="2.16.840.1.113883.2.1.3.2.4.18.16" />
        <observation classCode="OBS" moodCode="EVN">
            <templateId extension="COCD_TP146011UK04#Diagnosis" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
            <id root="9ED2F3D0-9D5B-41C1-A68A-B109710AC601" />
            <code code="84855007" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="Acantholytic vesicular dermatitis" />
            <statusCode code="completed" />
            <effectiveTime>
                <center value="20080128" />
            </effectiveTime>
        </observation>
    </entry>
```

4.15 Supply Medication Example

```
    <entry contextConductionInd="true" typeCode="COMP">
        <npfitlc:contentId extension="COCD_TP146033UK04#SupplyMedication" root="2.16.840.1.113883.2.1.3.2.4.18.16" />
        <supply classCode="SPLY" moodCode="EVN">
            <templateId extension="COCD_TP146033UK04#SupplyMedication" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
            <id root="7D616940-AE1A-11DB-9732-B18E1E0994CD" />
            <code code="373784005" displayName="dispensing medication" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
                <originalText>
                    <reference value="#a1" />
                </originalText>
            </code>
            <statusCode code="completed" />
            <effectiveTime value="200801231400+0100" />
            <product typeCode="PRD">
                <templateId extension="COCD_TP146033UK04#product" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                <manufacturedProduct classCode="MANU">
                    <templateId extension="COCD_TP146033UK04#manufacturedProduct" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <manufacturedMaterial classCode="MMAT" determinerCode="KIND">
                        <templateId extension="COCD_TP146033UK04#manufacturedMaterial" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <code code="4851911000001109" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="Isotretinoin 20mg Capsules 56 capsules" />
                    </manufacturedMaterial>
                </manufacturedProduct>
            </product>
            <entryRelationship contextConductionInd="true" typeCode="COMP">
                <templateId extension="COCD_TP146033UK04#entryRelationship" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                <seperatableInd value="false" />
                <observation classCode="OBS" moodCode="EVN">
                    <templateId extension="COCD_TP146033UK04#supplyInstructions" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <code code="SI" codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" displayName="Supply Instructions" />
```

```
                        <value xsi:type="ST">take 2 tablets in the morning</value>
                    </observation>
                </entryRelationship>
                <entryRelationship contextConductionInd="false" typeCode="REFR">
                    <templateId extension="COCD_TP146033UK04#entryRelationship2" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <npfitlc:contentId extension="COCD_TP147031UK04#PlanMedicationAdministrationRef" root="2.16.840.1.113883.2.1.3.2.4.18.16" />
                    <substanceAdministration classCode="SBADM" moodCode="INT">
                        <templateId extension="COCD_TP147031UK04#PlanMedicationAdministrationRef" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <id root="7D616840-AE1A-11DB-9732-B18E1E0994CD" />
                        <code nullFlavor="NA" />
                        <consumable typeCode="CSM">
                            <manufacturedProduct classCode="MANU">
                                <manufacturedMaterial classCode="MMAT" determinerCode="KIND" />
                            </manufacturedProduct>
                        </consumable>
                    </substanceAdministration>
                </entryRelationship>
                <entryRelationship typeCode="COMP" contextConductionInd="true">
                    <templateId extension="COCD_TP146033UK04#entryRelationship5" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <seperatableInd value="false" />
                    <supply classCode="SPLY" moodCode="EVN">
                        <templateId extension="COCD_TP146033UK04#medicationQuantity" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <code code="246205007" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="Quantity" />
                        <quantity unit="pack" value="1">
                        </quantity>
                    </supply>
                </entryRelationship>
    </supply>
</entry>
```

4.16 MedicationAdministrationDose Example

```
<entry contextConductionInd="true" typeCode="COMP">
    <npfitlc:contentId extension="COCD_TP146029UK04#MedicationAdministrationDose" root="2.16.840.1.113883.2.1.3.2.4.18.16" />
    <substanceAdministration classCode="SBADM" moodCode="EVN">
                <templateId extension="COCD_TP146029UK04#MedicationAdministrationDose" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                <id root="7D616940-AE1A-11DC-9732-B18E1E0994CD" />
                <code code="225426007" displayName="administration of therapeutic substance" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
                    <originalText>
                        <reference value="#a4" />
                    </originalText>
                </code>
                <statusCode code="completed" />
                <effectiveTime value="200802150623+0100" />
                <consumable typeCode="CSM">
                    <templateId extension="COCD_TP146029UK04#consumable" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <manufacturedProduct classCode="MANU">
                        <templateId extension="COCD_TP146029UK04#manufacturedProduct" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <manufacturedMaterial determinerCode="KIND" classCode="MMAT">
```

```
                                        <templateId extension="COCD_TP146029UK04#manufacturedMaterial" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                                        <code code="48115110000001100" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="Streptase 1.5million unit powder for solution
for injection vials (CSL Behring UK Ltd)" />
                                </manufacturedMaterial>
                        </manufacturedProduct>
                </consumable>
                <entryRelationship contextConductionInd="true" typeCode="COMP">
                        <templateId extension="COCD_TP146029UK04#entryRelationship1" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <seperatableInd value="false" />
                        <observation classCode="OBS" moodCode="EVN">
                                <templateId extension="COCD_TP146029UK04#administrationDetails" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                                <code code="AD" codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" displayName="Medication administration Instructions" />
                                <value xsi:type="ST">intravenous infusion over 60 minutes</value>
                        </observation>
                </entryRelationship>
                <entryRelationship contextConductionInd="true" typeCode="COMP">
                        <templateId extension="COCD_TP146029UK04#entryRelationship3" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <observation classCode="OBS" moodCode="EVN">
                                <templateId extension="COCD_TP146029UK04#administrationType" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                                <code code="AT" codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" displayName="Medication administration type" />
                                <value xsi:type="CV" code="DO" codeSystem="2.16.840.1.113883.2.1.3.2.4.17.185" displayName="administration of a dose" />
                        </observation>
                </entryRelationship>
                <entryRelationship contextConductionInd="true" typeCode="COMP">
                        <templateId extension="COCD_TP146029UK04#entryRelationship5" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <seperatableInd value="false" />
                        <supply classCode="SPLY" moodCode="EVN">
                                <templateId extension="COCD_TP146029UK04#medicationQuantity" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                                <code code="246205007" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="Quantity" />
                                <quantity unit="units" value="1500000" />
                        </supply>
                </entryRelationship>
        </substanceAdministration>
</entry>
```

4.17 MedicationAdministrationCourse Example

```
<entry contextConductionInd="true" typeCode="COMP">
        <npfitlc:contentId extension="COCD_TP146030UK04#MedicationAdministrationCourse" root="2.16.840.1.113883.2.1.3.2.4.18.16" />
        <substanceAdministration classCode="SBADM" moodCode="EVN">
                <templateId extension="COCD_TP146030UK04#MedicationAdministrationCourse" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                <id root="7D616940-AE1B-11DC-9732-B18E1E0994CD" />
                <code code="225426007" displayName="administration of therapeutic substance" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
                        <originalText>
                                <reference value="#a6" />
                        </originalText>
                </code>
                <statusCode code="completed" />
                <effectiveTime xsi:type="IVL_TS">
```

```
                    <low value="20080215" />
                    <high value="20080222" />
                </effectiveTime>
                <consumable typeCode="CSM">
                    <templateId extension="COCD_TP146030UK04#consumable" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <manufacturedProduct classCode="MANU">
                        <templateId extension="COCD_TP146030UK04#manufacturedProduct" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <manufacturedMaterial determinerCode="KIND" classCode="MMAT">
                            <templateId extension="COCD_TP146030UK04#manufacturedMaterial" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                            <code code="3939111000001100" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="Cefuroxime 750mg powder for injection vials
(A A H Pharmaceuticals Ltd)" />
                        </manufacturedMaterial>
                    </manufacturedProduct>
                </consumable>
                <entryRelationship contextConductionInd="true" typeCode="COMP">
                    <templateId extension="COCD_TP146030UK04#entryRelationship1" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <seperatableInd value="false" />
                    <observation classCode="OBS" moodCode="EVN">
                        <templateId extension="COCD_TP146030UK04#administrationDetails" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <code code="AD" codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" displayName="Medication administration Instructions" />
                        <value xsi:type="ST">750mg intravenous injection 3 times daily</value>
                    </observation>
                </entryRelationship>
                <entryRelationship contextConductionInd="true" typeCode="COMP">
                    <templateId extension="COCD_TP146030UK04#entryRelationship3" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <observation classCode="OBS" moodCode="EVN">
                        <templateId extension="COCD_TP146030UK04#administrationType" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <code code="AT" codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" displayName="Medication administration type" />
                        <value xsi:type="CV" code="CO" codeSystem="2.16.840.1.113883.2.1.3.2.4.17.185" displayName="administration of a complete course" />
                    </observation>
                </entryRelationship>
    </substanceAdministration>
</entry>
```

4.18 MedicationDiscontinuation Example

```
<entry typeCode="COMP" contextConductionInd="true">
    <npfitlc:contentId root="2.16.840.1.113883.2.1.3.2.4.18.16" extension="COCD_TP146031UK04#PlanMedicationAdministration" />
    <substanceAdministration moodCode="INT" classCode="SBADM">
                <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#PlanMedicationAdministration" />
                <id root="7D616840-AE1A-11DB-9732-B18E1E0994CD" />
                <code code="405613005" displayName="Planned procedure" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
                    <originalText>
                        <reference value="#a3" />
                    </originalText>
                    <qualifier>
                        <name code="363589002" displayName="Associated procedure"/>
                        <value code="225426007" displayName=" Administration of therapeutic substance"/>
                    </qualifier>
```

```
</code>
<statusCode code="active" />
<effectiveTime xsi:type="IVL_TS">
        <low value="200801131200+0100" />
</effectiveTime>
<consumable typeCode="CSM">
        <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#consumable" />
        <manufacturedProduct classCode="MANU">
                <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#manufacturedProduct" />
                <manufacturedMaterial determinerCode="KIND" classCode="MMAT">
                        <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#manufacturedMaterial" />
                        <code code="332406008" displayName="Isotretinoin 20mg Capsule" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" />
                </manufacturedMaterial>
        </manufacturedProduct>
</consumable>
<entryRelationship typeCode="COMP" contextConductionInd="true" inversionInd="false">
        <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship" />
        <seperatableInd value="false" />
        <supply moodCode="INT" classCode="SPLY">
                <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#supplyMedication" />
                <id root="7D616840-AE1A-11DB-9733-B18E1E0994CD" />
                <code code="405613005" displayName="Planned procedure" codeSystem="2.16.840.1.113883.2.1.3.2.4.15">
                        <qualifier>
                                <name code="363589002" displayName="Associated procedure"/>
                                <value code="373784005" displayName="dispensing medication"/>
                        </qualifier>
                </code>
                <effectiveTime xsi:type="IVL_TS">
                        <center value="20080206" />
                </effectiveTime>
                <repeatNumber>
                        <low nullFlavor="NA" />
                        <high value="3" />
                </repeatNumber>
                <quantity value="28" unit="1">
                        <translation value="28" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" code="385055001" displayName="Tablet" />
                </quantity>
        </supply>
</entryRelationship>
<entryRelationship typeCode="COMP" contextConductionInd="true">
        <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship1" />
        <seperatableInd value="false" />
        <observation moodCode="EVN" classCode="OBS">
                <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#dosageInstructions" />
                <code codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" code="DI" displayName="Dose Instructions" />
                <value xsi:type="ST">take 2 tablets in the morning</value>
        </observation>
</entryRelationship>
<entryRelationship typeCode="COMP" contextConductionInd="true">
        <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship2" />
```

```
                    <seperatableInd value="false" />
                    <observation moodCode="EVN" classCode="OBS">
                        <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#additionalInstructions" />
                        <code codeSystem="2.16.840.1.113883.2.1.3.2.4.17.192" code="AI" displayName="Additional Instructions" />
                        <value xsi:type="ST">Can only receive repeat supply from the dermatology clinic</value>
                    </observation>
                </entryRelationship>
                <entryRelationship typeCode="SUBJ" contextConductionInd="true" inversionInd="true">
                    <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship3" />
                    <seperatableInd value="false" />
                    <observation moodCode="EVN" classCode="OBS">
                        <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#lastMedicationAdministrationReview" />
                        <id root="7D616840-AE1A-11DB-9734-B18E1E0994CD" />
                        <code codeSystem="2.16.840.1.113883.2.1.3.2.4.15" code="314530002" displayName="Medication review done" />
                        <effectiveTime value="20080113" />
                    </observation>
                </entryRelationship>
                <entryRelationship typeCode="RSON" contextConductionInd="false">
                    <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP146031UK04#entryRelationship6" />
                    <npfitlc:contentId root="2.16.840.1.113883.2.1.3.2.4.18.16" extension="COCD_TP147011UK03#DiagnosisRef" />
                    <seperatableInd value="false" />
                    <observation moodCode="EVN" classCode="OBS">
                        <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP147011UK03#DiagnosisRef" />
                        <id root="7D616840-AE1A-11DB-9736-B18E1E0994CD" />
                        <code nullFlavor="NA" />
                    </observation>
                </entryRelationship>
                <entryRelationship contextConductionInd="false" typeCode="RSON">
                    <templateId extension="COCD_TP146031UK04#entryRelationship7" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                    <npfitlc:contentId extension="COCD_TP146036UK04#MedicationDiscontinuation" root="2.16.840.1.113883.2.1.3.2.4.18.16" />
                    <seperatableInd value="false" />
                    <observation classCode="OBS" moodCode="EVN">
                        <templateId extension="COCD_TP146036UK04#MedicationDiscontinuation" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                        <id root="7D616840-AE1A-11DB-9736-B18E1E0995CD" />
                        <code code="274512008" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName="Drug therapy discontinued" />
                        <statusCode code="completed" />
                        <effectiveTime value="20080312" />
                        <entryRelationship contextConductionInd="true" typeCode="COMP" inversionInd="false">
                            <templateId extension="COCD_TP146036UK04#entryRelationship" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                            <seperatableInd value="false" />
                            <act classCode="INFRM" moodCode="EVN">
                                <templateId extension="COCD_TP146036UK04#informPatient" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                                <id root="7D616840-AE1A-11DB-9736-B18E1E0995DD" />
                                <code code="185381000000106" codeSystem="2.16.840.1.113883.2.1.3.2.4.15" displayName=" Patient informed of discontinuation
of medication" />
                                <effectiveTime value="20080312" />
                                <performer typeCode="PRF">
                                    <templateId extension="COCD_TP146036UK04#performer" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                                    <npfitlc:contentId extension="COCD_TP145022UK02#AssignedEntitySDS" root="2.16.840.1.113883.2.1.3.2.4.18.16" />
                                    <modeCode code="PHONE" />
```

```
                                        <assignedEntity classCode="ASSIGNED">
                                                <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2" extension="COCD_TP145022UK02#AssignedEntitySDS"
/>
                                                <id root="1.2.826.0.1285.0.2.0.67" extension="100096655241" />
                                                <id root="1.2.826.0.1285.0.2.0.65" extension="200044213298" />
                                                <code code="R1290" displayName="Pharmacist" codeSystem="2.16.840.1.113883.2.1.3.2.4.17.196" />
                                                <assignedPerson classCode="PSN" determinerCode="INSTANCE">
                                                        <templateId root="2.16.840.1.113883.2.1.3.2.4.18.2"
extension="COCD_TP145022UK02#assignedPerson" />
                                                        <name>Ms. Jenny Alberta</name>
                                                </assignedPerson>
                                        </assignedEntity>
                                </performer>
                                <participant contextControlCode="&#xA;          OP" typeCode="PRCP">
                                        <templateId extension="COCD_TP146036UK04#primaryInformationRecipient" root="2.16.840.1.113883.2.1.3.2.4.18.2" />
                                        <participantRole classCode="PAT">
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B Appendix 2 – Additional Reference Materials

NHS Dictionary of Medicines and Devices	http://www.dmd.nhs.uk/
RFC 2119 - Key words for use in RFCs to Indicate Requirement Levels	http://www.faqs.org/rfcs/rfc2119.html