

**Integrating the Healthcare Enterprise**



**IHE PCC**

**Technical Framework Supplement**

**Request for Clinical Guidance (RCG) and  
Immunization Care Plan (ICP)**

**Public Comment**

Date: June 1, 2009  
Author: David Shields, Keith W. Boone  
Email: [dshields@swpartners.com](mailto:dshields@swpartners.com), [keith.boone@ge.com](mailto:keith.boone@ge.com)

**This is a supplement to the IHE PCC Technical Framework V4.0.**

**It is submitted for Public Comment between June 1, 2009 and July 1, 2009.**

**Comments shall be submitted within that period to <http://forums.rsna.org>:**

1. Select the “IHE” forum
2. Select PCC Technical Framework
3. Select 2009-2010 Supplements for Public Comment
4. Select Request for Request for Clinical Guidance and Immunization Care Plan

Please use the Public Comment Template provided there when starting your New Thread.

**Details about IHE may be found at: [www.ihe.net](http://www.ihe.net)**

**Details about the IHE PCC may be found at: <http://www.ihe.net/Domains/index.cfm>**

**Details about the structure of IHE Technical Frameworks and Supplements may be found at: <http://www.ihe.net/About/process.cfm> and <http://www.ihe.net/profiles/index.cfm>**

**The current version of the IHE PCC Technical Framework may be found at: [http://www.ihe.net/Technical\\_Framework/index.cfm](http://www.ihe.net/Technical_Framework/index.cfm)**

These “boxed” instructions are for the author to indicate to the Volume Editor how to integrate the relevant section(s) into the overall Technical Framework

<i>Replace Section X.X by the following:</i>
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## Introduction

A Request for Clinical Guidance (RCG) describes how Clinical Decision Support services can be integrated with healthcare IT systems. It defines a transaction that allows a health care provider to request suggestions for treatment, diagnosis or testing based on individualized patient data. The RCG profile is used with content profiles that describe the individualized patient data that is submitted to the service and the responses that service returns.

The Immunization Care Plan (ICP) profile builds from the Immunization Content (IC) profile and adds care plan information to that profile to support the exchange of care plans to and from a clinical decision support service.

These two profiles are intended to work together. The Immunization Care Plan defines the clinical content to be exchanged to support a vaccine forecasting service, and the Request for Clinical Guidance profile describes the protocol to be used to exchange this content.

## Open Issues for Request for Clinical Guidance

1. Addressing the issues of feedback, given that these choices were provided, getting feedback upon what choice was selected (if any) is important to the decision support process (c.f., Machine learning). What mechanism should be provided to allow feedback to be given?
2. Content in the HL7 Message and Control Act wrappers duplicate capabilities now available in WS-\* profiles, how should this overlap be addressed?
3. The Request for Clinical Guidance needs to be able to limit the diseases or disease families, either by inclusion (ie., provide RCG just for influenza), or by exclusion (ie, provide RCG for all but influenza and pneumonia). Can we keep this out of the payload, and specify it as part of the web service operation?

## Open Issues for Immunization Care Plan

1. The Request for Clinical Guidance needs to be able to specify one or more immunization guidelines to be used. For example, the request may indicate that the patient is to be immunized using Standard CDC / ACIP population guidelines, or travel guidelines for travel to SE Asia. How should these guidelines be referenced?
2. Value and extent of a “selection of rank-ordered immunization care plans” that might be returned to support various combinations of vaccine availability and / or limitations on the number of shots to be given in any single visit?

## Closed Issues

### Closed issues for Request for Clinical Guidance

1. Previously defined IHE PCC Content profiles for Immunization Content (IC) will be used for both the “Request for Clinical Guidance” and the response. In the response, IC will express the “validated history” as well as the “immunization care plan”.
2. Is the profile dealing with just synchronous queries (question/answer style), or will it also deal with asynchronous issues as well (stateless vs. stateful).  
This profile deals with just synchronous/stateless queries. Asynchronous/stateful clinical decision support is enabled by the Care Management profile.
3. Is there a way to address stateless/stateful above using composition, and if so, what actor deals with maintenance of state between invocations?  
There is a way to address stateful decision support using composition with the care management actor and the clinical data source. The maintenance of state information depends upon the clinical decision support algorithm and is outside the scope of this profile.
4. Is the latter an issue to be addressed in ITI in a subsequent iteration?  
Possibly, but not at this time.
5. Inclusion of HL7 v2 content in the Request for Clinical Guidance, and its response needs to be further defined. E.g., will it be piped v2 messages, contained within a CDATA xml element, or will it follow the v2 XML naming conventions and structure? Which specific v2 messages will be supported? We might want to use VXU and VXR messages for the time being, structured according to the CDC / AIRA Implementation Guide for Immunization Registries. This needs to be harmonized with the current effort to update this Implementation Guide.  
The RCG-IC will support IC content in the QCG in only Care Record format and will not support Version 2 messages.

### Closed issues for Immunization Care Plan

1. Need specific codes to use for “Intent” of IC Domain Content in the RCG-IC response for both “Validated” history content, and for “Proposed” immunization care plan. The use of IC for both “validated history” and “immunization care plan” in the response to the service call needs to be examined carefully to see if there are any other standard vocabulary items that might need new codes.  
These were established by the Immunization Care Plan entry, and for “validated history”, in the alert entry.
2. We agreed that invalid doses would not have the dose number flagged to indicate that they are invalid, but would instead have an observation indicating the administrative status of “invalid” with the relevant reasons. This observation needs a code (LOINC?). See the alert entry.

3. The PCC Immunization Content Profile Supplement needs to be changed to specify additional ActCode values or MoodCode values to support “validated” history, and “proposed” vaccine forecast / immunization Care Plan.

# Volume 1 – Integration Profiles

## Glossary

*Add the following terms to the Glossary:*

Adverse Event  
Clinical Decision Support  
Clinical Decision Support Rules  
Combination Vaccine  
Contraindication  
Decision Support Service  
Decision Support System  
Dose of Antigen / Vaccine Component  
Dose of Vaccine / Administered Dose  
Guidelines  
Immunization Care Plan  
Immunization Information System (IIS)  
Immunization Interval  
Immunization Registry (IR)  
Immunization Schedule  
Ineffective Dose  
Invalid Dose  
Multiple Antigen Vaccine  
Precaution  
Vaccine  
Vaccine Forecast

## 2.5 Dependencies among Integration Profiles

*Add the following to the Table in Section 2.5*

Integration Profile	Dependency	Dependency Type	Purpose
Request for Clinical Guidance (RCG)	Consistent Time (CT)	The Care Manager and Clinical Decision Advisor actors shall implement the Time Client actor of the Consistent Time (CT) profile.	Supports the synchronize of time stamps in information generated between the two systems.
Immunization Care Plan (ICP)	Request for Clinical Guidance (RCG)	The Content Creator and Content Consumer actors must implement either the Care Manager or the Clinical Decision Support Advisor actor of RCG.	The content defined in this profile is intended to be used in either the request or response for clinical guidance.

## 2.7 History of Annual Changes

***Add the following bullet to the end of the bullet list in Section 2.7***

In the 2009-2010 cycle of the Patient Care Coordination Initiative, the following integration profiles were added to the technical framework.

- Added the Request for Clinical Guidance (RCG) Profile that supports the integration of clinical decision support services into healthcare IT systems.
- Added the Immunization Care Plan (ICP) Profile which defines the payload used to exchange information with a clinical decision support service to propose a care plan that includes a vaccination schedule for a patient, and an evaluation of the immunization history.

***Add Section X***

## **X Request for Clinical Guidance Integration Profile**

The Request for Clinical Guidance Profile (RCG) supports integration of Clinical Decision Support into healthcare IT systems. A wide variety of these systems often need access to clinical guidance, for example, when ordering medications, determining appropriate immunizations, diagnostic tests, et cetera. This profile makes it possible for systems to obtain this guidance from within an enterprise.

A wide class of problems in healthcare are described as being in the area of clinical decision support. Integration of these capabilities into healthcare IT systems has been slow for a variety of reasons. Most of the attention on standards for integration of clinical decision support into applications has been in the area of describing the logic used to solve the problem. However, exchange of decision support algorithms has failed to make decision support more readily available. In part this is due to the wide variety of clinical decision algorithms that may be used to solve a problem. Some problems may be amenable to rule-based logic (e.g., immunization forecasting), others might use complex formulas (weight based dosing regimes), and others may use databases of medical knowledge (e.g., medication interaction checking). No single approach fits all decision support needs. Rather than specify the language in which clinical decision support rules are expressed, this profile describes how to exchange patient data as the payload needed to drive the clinical decision support service.

In this profile we show a common way to integrate clinical decision support services into healthcare IT applications to provide solutions to individualized patient care decisions such as:

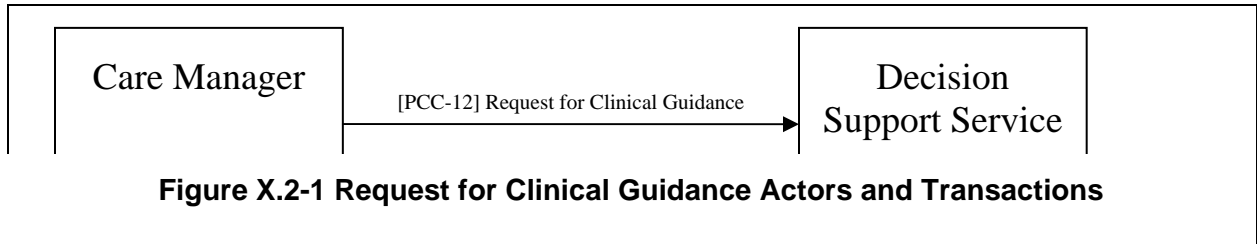
- Drug and Allergy interaction detection
- Forecasting a vaccine schedule
- Identification of eligibility for participation in research or other programs
- Cost effective selection of antibiotics based on recent institutional data

The RCG profile leverages the existing content modeling defined previously in the PCC Technical Framework to deliver information needed to a clinical decision support service. The clinical decision support service then responds with updated information potentially including a suggested care plan or additional clinical information.

The care plan may propose additional observations and assessments to be made to provide more complete analysis, suggest treatment options or contraindications, or additional testing to be performed or avoided. Additional clinical information may be provided to suggest diagnoses or evaluate effectiveness or quality of care (e.g., effectiveness of vaccinations based on prior history and existing or new guidelines or information).

## X.2 Actors and Transactions

Figure X.2-1 shows the actors directly involved in the Immunization Care Plan Integration Profile and the relevant transactions between them.



**Figure X.2-1 Request for Clinical Guidance Actors and Transactions**

## X.3 Options

The table below lists the transactions for each actor directly involved in the Request for Clinical Guidance Profile. In order to claim support of this Integration Profile, an implementation must perform the required transactions.

**Table X.2-1 Request for Clinical Guidance Actors and Transactions**

Actor	Name	Optionality	Transaction
Care Manager	Request for Clinical Guidance	R	PCC-12
Decision Support Service	Request for Clinical Guidance	R	PCC-12

## X.4 Grouping

### X.4.1 Consistent Time

These actors shall implement Time Client to ensure that consistent time is maintained across systems.

### X.4.2 Audit Trail and Node Authentication

Actors of this profile may be grouped with either the Secure Node or the Secure Application actor, to ensure the security of the information being exchanged.

### X.4.3 Content Integration Profiles

The Care Manager and Decision Support Service actors must be bound with content profiles describing the payloads which are used in the request and response messages of the Request for Clinical Guidance transaction.

Content profiles defined by IHE or other organizations may be used in this binding. This supplement defines the Immunization Care Plan (ICP) profile which includes content modules that support vaccination forecast and immunization history evaluation.

Appendix F Transforming CDA Documents to Care Record Messages describes the model by which a CDA documents found in IHE profiles or elsewhere can be transformed to the Care Record messages used in the Request for Clinical Guidance transaction. This appendix shall be applied when using existing IHE CDA based specifications to define the payload.

## **X.5 Request for Clinical Guidance Process Flow**

### **X.5.1 Immunization Forecasting**

An EMR provides current immunization status, allergies and problem information to an immunization forecasting service. The forecasting service responds with evaluations of the immunizations and one or more immunization schedules. The EMR presents the immunization schedule to the end user, who then incorporates one of the suggested schedules into the patient's care plan.

### **X.5.2 Drug Safety**

When a medication is to be administered an EMR provides the patient's current height, weight, problems, medications and allergies to a decision support system, along with proposed medication orders. The decision support system responds with alerts or suggested alternative treatments based on possible medication interactions, allergies, or even cost. The EMR can then offer these suggestions to the end user prior to completion of the order.

### **X.5.3 Identifying Qualifying Patients**

Upon completion of a visit, the EMR activates a decision support system passing the current patient diagnoses. Upon determining that the patient has been diagnosed with Diabetes, the decision support system notifies the EMR that it should activate protocols for diabetic care.

## **X.6 Immunization Care Plan Security Considerations**

The Request for Clinical Guidance may exchange personally identifiable health information between different systems using web services. For many decision support applications the specific patient identity need not be exchanged to take advantage of these services. Eliminating patient identity information is often not sufficient to obscure the patient identity and should not be relied upon to mitigate risks of exposure. For example, communicating birth date and gender is enough to identify large groups of people in a densely populated urban area.

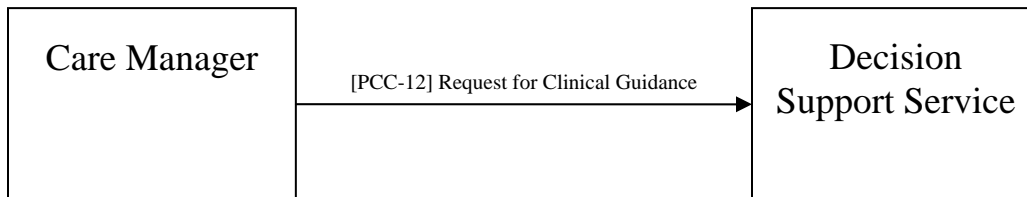
Therefore, these exchanges of health information need to be secured. One mechanism is to use the IHE ATNA profile to secure the communications. IHE further recommends careful evaluation of the required information to ensure that only relevant information is communicated between the two systems (e.g., communicating age instead of birth date when age is sufficient for the decision support application).

## Y Immunization Care Plan Integration Profile

The information collected about a persons’s overall medical history can be used to recognize medical conditions which might adversely affect a person who receives any vaccine. When this information is combined with the personal immunization history of that person and standard guidelines or rules an individualized Immunization Care Plan can be produced.

### Y.2 Actors and Transactions

Figure Y.2-1 shows the actors directly involved in the Immunization Care Plan Integration Profile and the relevant transactions between them.



**Figure Y.2-1 Request for Clinical Guidance Actors and Transactions**

Guidance Profile. In order to claim support of this Integration Profile, an implementation must perform the required transactions.

**Table Y.2-1 Request for Clinical Guidance Actors and Transactions**

Actor	Name	Optionality	Transaction
Care Manager	Request for Clinical Guidance	R	PCC-12
Decision Support Service	Request for Clinical Guidance	R	PCC-12

#### Y.2.1 Grouping

##### Y.2.1.1 Content Bindings with QCG

The exchange occurring between the Care Manager and Decision Support Service are bound by this profile to the Immunization Care Plan Request and Immunization Care Plan Response content modules found in Volume 2. The Care Manager shall send the Immunization Care Plan Request content module as the payload of the Request for Clinical Guidance message. The Decision Support Service shall respond to the request with the Immunization Care Plan Response content module.

The Care Manager actor of this profile shall be grouped with the Care Manager actor of the Request for Clinical Guidance Profile to effect the exchange of the payload. The Decision Support Service Actor of this profile shall be grouped with the Decision Support Service actor of the Request for Clinical Guidance Profile to support the computation of the response message.

### X.3 Immunization Care Plan Process Flow

The Immunization Care Plan integration profile has a very simple process flow, shown in the Figure X.2-1 below.

A Care Manager Actor acquires the complete electronic medical and immunization history of a patient. The means by which this information is obtained are out of scope of this profile. IHE has published profiles such as the Immunization Content profile upon which this supplement is based that would enable a Care Manager to access the necessary information.

The Care Manager Actor will submit the relevant portions of this medical history along with the complete immunization history to the RCG-Decision Support Service, using a Request for Clinical Guidance– Immunization Content (or the option for HL7 v2 content).

The RCG-Decision Support Service will return the evaluated immunization history and a proposed immunization care plan to the Care Manager. How this care plan is used is out of scope of this profile.

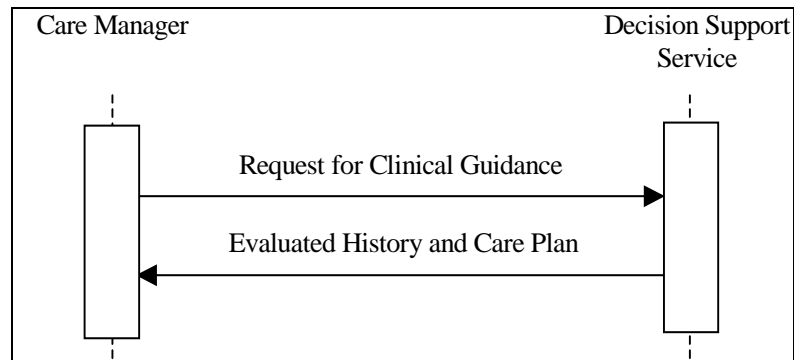


Figure Y.2-1. Basic Process Flow in Immunization Care Plan Integration Profile

### X.4 Immunization Care Plan Security Considerations

See the Security Considerations of the Request for Clinical Guidance Profile.

#### <Appendix A> Actor Summary Definitions

Decision Support Service – A decision support service uses world knowledge, algorithms and individual instance data to generate new knowledge that will facilitate clinical decision making.

#### <Appendix B> Transaction Summary Definitions

Request for Clinical Guidance – The request for clinical guidance transaction enables a health IT system to provide clinical data and proposed care actions to a decision support service that can evaluate and suggest additional testing or treatment to provide effective care.

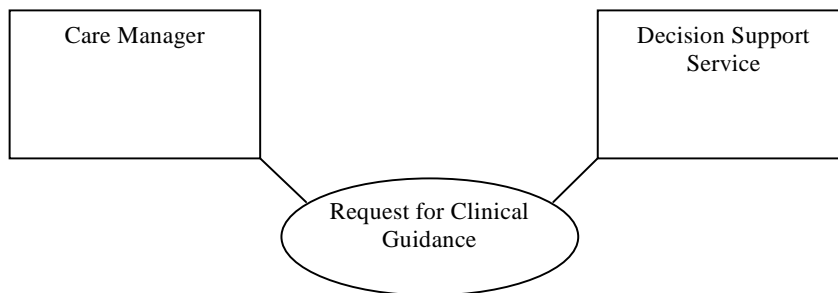
## Volume 2 - Transactions

*Add Section 3.12 to Volume II*

### 1.1 Request for Clinical Guidance

This section corresponds to the PCC-12 transaction of the IHE Technical Framework. PCC-12 is used by the Care Manager and Decision Support Service actors found in the RCG profile.

#### 1.1.1 Use Case Roles



**Actor:** Care Manager

**Role:** Sends clinical data, care plans and proposed treatments to the Decision support service to request clinical guidance with an immediate response as an application acknowledgement.

Coresponding HL7 Application Roles:

Care Provision Reporter (REPC\_AR004014UV01)

Request Message Sender with App Acks (Immediate) (MCCI\_AR000005UV01)

**Actor:** Decision Support Service

**Role:** Evaluations clinical data, care plans and proposed treatments in response to a request for clinical guidance. Responds with suggestions for additional observations, care plans or treatments that may be performed for the patient in the application acknowledgement.

Coresponding HL7 Application Roles:

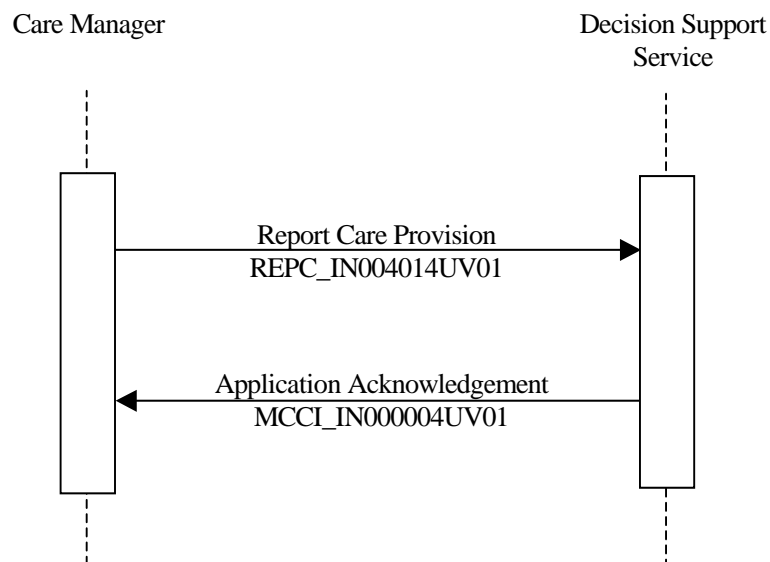
Care Provision Reporting Receiver (REPC\_AR004024UV01)

Request Rcvr w/ App Ack (Immed) (MCCI\_AR000006UV01)

## 1.1.2 Referenced Standards

- CareRecord** [HL7 Care Provision Care Record \(DSTU\)](#)  
**HL7WS** [HL7 Version 3 Standard: Transport Specification - Web Services Profile, Release](#)  
**SOAP** [Simple Object Access Protocol Version 1.1 \(SOAP 1.1\)](#)  
**SOAP12** [Simple Object Access Protocol Version 1.2 \(SOAP 1.2\)](#)

## 1.1.3 Interaction Diagrams



## 1.1.4 Report Care Provision

The report care provision message is sent from the Care Manager Actor to the Decision Support Service Actor to indicate a care event needing clinical guidance.

### 1.1.4.1 Trigger Events

This message is triggered by a user action that initiates a request for clinical guidance. This corresponds to the HL7 trigger event: [REPC\\_TE004014UV01](#).

### 1.1.4.2 Message Semantics

The Report Care Provision corresponds to the HL7 Interaction REPC\_IN004014UV01, which reports the care provided to a patient. In the context of the Request for Clinical Guidance profile, this includes the care acts that are relevant for computation of the clinical guidance being requested. A schema for this interaction can be found at: [http://www.hl7.org/v3ballot/html/processable/multicacheschemas/REPC\\_IN004014UV01.htm](http://www.hl7.org/v3ballot/html/processable/multicacheschemas/REPC_IN004014UV01.htm)

This schema includes:

- The transmission wrapper MCCI\_MT000100UV01
- The control act wrapper MFMI\_MT700702UV01, and
- The message payload REPC\_MT004000UV01.

These components of the interaction are specified in the HL7 standards described above.

### 1.1.4.3 Transmission Wrapper

The transmission wrapper MCCI\_MT000100UV01 provides information about the message transmission and routing. Transmission wrappers are further described in ITI TF-2: Appendix O.

An example transmission wrapper is given below for this interaction. Items marked in dark gray are transmitted as specified in ITI TF-2: Appendix O. Items in bold black text are further constrained by this profile in this interaction.

```

<REPC_IN004014UV01 xmlns="urn:hl7-org:v3" ITSVersion="XML_1.0"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <id root=' ' extension=' ' />
  <creationTime value=' ' />
  <interactionId extension='REPC_IN004014UV01' root='2.16.840.1.113883.5' />
  <processingCode code='D|P|T' />
  <processingModeCode code='T' />
  <acceptAckCode code='AL' />
  <receiver typeCode="RCV">
    <device determinerCode="INSTANCE">
      <id />
      <name />
      <telecom value=' ' />
      <manufacturerModelName />
      <softwareName />
    </device>
  </receiver>
  <sender typeCode="SND">
    <device determinerCode="INSTANCE">
      <id />
      <name />
      <telecom value=' ' />
      <manufacturerModelName />
      <softwareName />
    </device>
  </sender>
  <controlActProcess>
    See Control Act Wrapper below
  </controlActProcess>
</REPC_IN004014UV01>

```

#### 1.1.4.3.1 <REPC\_IN004014UV01 xmlns="urn:hl7-org:v3" ITSVersion="XML\_1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

The HL7 Interaction being sent will control the name of the root element in the message. The namespace of this message shall be urn:hl7-org:v3, and the ITSVersion attribute shall be "XML\_1.0".

**1.1.4.3.2 <interactionId extension='REPC\_IN004014UV01'  
root='2.16.840.1.113883.5'/>**

The identifier for the interaction shall be sent as shown above.

**1.1.4.3.3 <processingModeCode code='T'/>**

The processingModeCode distinguishes the type of processing being performed. This element shall be present and have the value shown above to indicate that this message is for current processing.

**1.1.4.3.4 <acceptAckCode code='AL'/>**

The acceptAckCode indicates whether the receiver wants to receive an acknowledgement, and shall be sent as shown above. This transaction requires an application acknowledgement.

**1.1.4.4 Control Act Wrapper**

The control act wrapper MFMI\_MT700702UV01 provides information about the business actors related to the transaction, including the author or performer of the act. Control act wrappers are further described in ITI TF-2: Appendix O. An example control act wrapper is given below for this interaction. Items marked in dark gray are transmitted as specified in ITI TF-2: Appendix O. Items in bold black text are further constrained by this profile in this interaction, and must appear as shown in the example below.

```
<controlActProcess moodCode="EVN">
  <id root=' ' extension=' '/>
  <code code='REPC_TE004014UV01'/>
  <effectiveTime value=' '/>
  <languageCode code=' '/>
  <authorOrPerformer typeCode=' '></authorOrPerformer>
  <subject typeCode='SUBJ' contextConductionInd='false'>
    <registrationEvent classCode='REG' moodCode='EVN'>
      <statusCode code='active'/>
      <subject2 typeCode='SUBJ' contextConductionInd='false'>
        <careProvisionEvent>
          See Care Provision Event below
        </careProvisionEvent>
      </subject2>
    </registrationEvent>
  </subject>
</controlActProcess>
```

**1.1.4.4.1 <code code='REPC\_TE004014UV01'/>**

The code element identifies the trigger event. The trigger event for this act is the report of care provision. This element shall be transmitted as shown above.

#### 1.1.4.5 Care Provision Event

The <subject2> element of the <controlActProcess> element above carries the clinical data, care plans and proposals for care that are the subject of the request for clinical guidance. This content must be defined for a clinical decision support request. The Immunization Care Plan profile provides one example of a decision support request in the Immunization Care Plan Request content module.

#### 1.1.5 Application Acknowledgement

The application acknowledgement message is sent from the Decision Support Service Actor to the Care Manager Actor to respond to the request for clinical guidance. The response contains the original clinical data sent in the request for clinical guidance along with the clinical guidance provided by the Decision Support Service Actor.

##### 1.1.5.1 Trigger Events

The trigger event for this message is the receipt of a Report Care Provision event. This corresponds to the HL7 trigger event: [MCCI\\_TE000003UV01](#).

##### 1.1.5.2 Message Semantics

The Application Acknowledgement corresponds to the HL7 Interaction MCCI\_IN000004UV01. An application acknowledgement includes the response to the initiating message from the receiver, along with the domain content that was acknowledged. The message itself is very similar to the message sent by the Care Manager Actor to the Clinical Decision Support Service actor. A list of the specific changes are identified in sections 1.1.5.3 Transmission Wrapper 1.1.5.4 Control Act Wrapper below.

Note: A schema for this message will be published at the same time as the trial implementation of this specification. We are interested in receiving comments about this use of the HL7 Transmission Structure messages with application acknowledgements.

##### 1.1.5.3 Transmission Wrapper

The transmission wrapper MCCI\_IN000003UV01 provides information about the message transmission and routing. Transmission wrappers are further described in ITI TF-2: Appendix O. An example transmission wrapper is given below for this interaction. Items marked in dark gray are transmitted as specified in ITI TF-2: Appendix O. Items in bold black text are further constrained by this profile in this interaction. This message wrapper is similar to the transmission wrapper used for the inbound message described in section 1.1.4.3 Transmission Wrapper under Report Care Provision above.

```

<REPC_IN004014UV01 xmlns="urn:hl7-org:v3" ITSVersion="XML_1.0"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <id root=' ' extension=' '/>
  <creationTime value=' '/>
  <interactionId extension='MCCI_IN000004UV01' root='2.16.840.1.113883.5' />
  <processingCode code='D|P|T' />
  <processingModeCode code='T' />
  <acceptAckCode code='NE' />
  <receiver typeCode="RCV">
    <device determinerCode="INSTANCE">
      <id />
      <name />
      <telecom value=' ' />
      <manufacturerModelName />
      <softwareName />
    </device>
  </receiver>
  <sender typeCode="SND">
    <device determinerCode="INSTANCE">
      <id />
      <name />
      <telecom value=' ' />
      <manufacturerModelName />
      <softwareName />
    </device>
  </sender>
  <controlActProcess>
    See Control Act Wrapper below
  </controlActProcess>
</REPC_IN004014UV01>

```

**Note:** This application acknowledgement does not require the optional <acknowledgement> element. This information is redundant when acknowledgements are sent in an immediate response.

### 1.1.5.3.1 <REPC\_IN004014UV01 xmlns="urn:hl7-org:v3" ITSVersion="XML\_1.0" >

The message element name shall be REPC\_IN004014UV01 as described above.

**Note:** Please comment on whether the message element name should be REPC\_IN004014UV01 or MCCI\_IN000004UV01. The relevant HL7 domain content does not specify interactions for acknowledgements. One benefit to use of the REPC\_IN004014UV01 interaction as is done above is that the same message schema is used for the request and response messages.

### 1.1.5.3.2 <interactionId extension='MCCI\_IN000004UV01' root='2.16.840.1.113883.5' />

The interactionId element identifies the unique information exchange and shall be transmitted as shown above.

**Note:** Please comment on whether the extension attribute should be MCCI\_IN000004UV01 or REPC\_IN004014UV01. Even though the schemas for these messages are the same, the interaction (response vs. request) is different. One benefit for the use of the MCCI\_IN000004UV01 interaction would be to distinguish between the report of care provision and the application acknowledgement.

### 1.1.5.3.3 <processingModeCode code='T'/>

The processingModeCode distinguishes the type of processing being performed. This element shall be present and have the value shown above to indicate that this message is for current processing.

### 1.1.5.3.4 <acceptAckCode code='NE'/>

The application acknowledgement response shall not require a separate acknowledgement.

### 1.1.5.4 Control Act Wrapper

The control act wrapper provides information about the business actors related to the transaction, including the author or performer of the act. Control act wrappers are further described in ITI TF-2: Appendix O. An example control act wrapper is given below for this interaction. Items marked in dark gray are transmitted as specified in ITI TF-2: Appendix O. Items in bold black text are further constrained by this profile in this interaction, and must appear as shown in the example below.

```
<controlActProcess moodCode="EVN">
  <id root=' ' extension=' '/>
  <code code='MCCI_TE000003UV01' />
  <effectiveTime value=' '/>
  <languageCode code=' '/>
  <authorOrPerformer typeCode=' '></authorOrPerformer>
  <subject typeCode='SUBJ' contextConductionInd='false'>
    <registrationEvent classCode='REG' moodCode='EVN'>
      <statusCode code='active' />
      <subject2 typeCode='SUBJ' contextConductionInd='false'>
        <careProvisionEvent>
          See Care Provision Event below
        </careProvisionEvent>
      </subject2>
    </registrationEvent>
  </subject>
</controlActProcess>
```

#### 1.1.5.4.1 <code code=' MCCI\_TE000003UV01'/>

The code element identifies the trigger event. The trigger event for this act is the sending of the application acknowledgement. This element shall be transmitted as shown above.

#### 1.1.5.5 Care Provision Event

The <subject2> element of the <controlActProcess> element above carries the clinical data, care plans and proposals for care that are the response to the request for clinical guidance. This content must be defined for a clinical decision support response. The Immunization Care Plan profile provides one example of a decision support request in the Immunization Care Plan Response content module.

### 1.1.5.6 Expected Actions – Care Manager

The Care Manager sends the Request for Clinical Guidance as specified above and waits for a response from the Decision Support Service.

### 1.1.5.7 Expected Actions – Decision Support Service

The Decision Support Service processes the data given in the request. The Decision Support Service shall respond with an application acknowledgement. The application acknowledgement will contain the original payload data, and may provide additional clinical statements, care plans or proposals for care. This additional data is the result of the clinical decision support service request.

```
<types>
  <xsd:schema elementFormDefault="qualified"
    targetNamespace="urn:h17-org:v3" xmlns:h17="urn:h17-org:v3">
    <xsd:import namespace="urn:h17-org:v3"
      schemaLocation="REPC_IN004014UV01.xsd"/>
    <xsd:element name="REPC_IN004014UV01"/>
  </xsd:schema>
</types>
```

The message type is declared to be of the appropriate type by the following WSDL snippet:

```
<message name='REPC_IN004014UV01_Message'>
  <part element='h17:REPC_IN004014UV01' name="Body"/>
</message>
```

The following WSDL naming conventions SHALL apply for this transaction:

WSDL Item	Value
wSDL:definitions/@name	DecisionSupportService
Get Care Record Query Response	REPC_IN004014UV01_Message
Message Acknowledgement	REPC_IN004014UV01_Message
portType	DecisionSupportService_PortType
SOAP 1.1 binding	DecisionSupportService_Binding_Soap11
SOAP 1.1 port	DecisionSupportService_Port_Soap11
SOAP 1.2 binding	DecisionSupportService_Binding_Soap12
SOAP 1.2 port	DecisionSupportService_Port_Soap12

The following WSDL snippets specify the Port Type and Binding definitions, according to the requirements specified in ITI TF-2: Appendix V.

### 1.1.5.8 Port Type

```
<portType name="ClinicalDataSource_PortType">
  <operation name="ClinicalDataSource_QUPC_IN043200UV">
    <input message="tns:QUPC_IN043200UV_Message"
      wsaw:Action="urn:hl7-org:v3:QUPC_IN043200UV"/>
    <output message="tns:MCCI_IN000002UV01_Message"
      wsaw:Action="urn:hl7-org:v3:MCCI_IN000002UV01"/>
  </operation>
</portType>
```

### 1.1.5.9 Bindings

```
<binding name="ClinicalDataSource_Binding_Soap12"
  type="ClinicalDataSource_PortType">
  <wsoap12:binding style="document"
    transport="http://schemas.xmlsoap.org/soap/http"/>
  <operation name="ClinicalDataSource_QUPC_IN043200UV">
    <wsoap12:operation soapAction="urn:hl7-org:v3:QUPC_IN043200UV"/>
    <input>
      <wsoap12:body use="literal"/>
    </input>
    <output>
      <wsoap12:body use="literal"/>
    </output>
  </operation>
</binding>
<binding name="ClinicalDataSource_Binding_Soap11"
  type="ClinicalDataSource_PortType">
  <wsoap11:binding style="document"
    transport="http://schemas.xmlsoap.org/soap/http"/>
  <operation name="ClinicalDataSource_QUPC_IN043200UV">
    <wsoap11:operation soapAction="urn:hl7-org:v3:QUPC_IN043200UV"/>
    <input>
      <wsoap11:body use="literal"/>
    </input>
    <output>
      <wsoap11:body use="literal"/>
    </output>
  </operation>
</binding>
```

### 1.1.6 Security Considerations

Communications between the Care Manager Actor and the Clinical Decision Support Service actors may contain personally identifiable health information. Even such limited data as the patient birth date, gender and location could reveal patient identity alone or combined with other information. The transmission of this information should be secured. The IHE ATNA profile ensures security of the transport and auditing and may be considered for this use.

#### 1.1.6.1 Security Audit Considerations

All RCG-IC Actors should record the following audit events.

Name	Description
Actor Start-Stop	
Export of PHI	RCG-IC Care Manager Only
Access PHI	

### 1.1.6.2 Actor Specific Security Considerations

*TBD*

*Modify the Immunization Content Sepecification described in the Immunization Content Profile by adding an optional care plan to the specification.*

### 6.1.1.Q.3 Specification

*Add an optional care plan to the Immunization Content module*

<p>Care Plan</p> <p>The care plan may be present to document the schedule of vaccinations that are intended or proposed for the the patient. When present the care plan shall include Immunization entries in intent or proposal mood describing the immunization plan. The care plan may include a reference to a specific guideline in definition mood to indicate the guideline that is being used.</p>	O	1.3.6.1.4.1.19376.1.5.3.1.1.18.3.1
--	---	------------------------------------

*Add the following to the conformance section of the Immunization Content module.*

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.18.3.1' />
    <!--Optional Care Plan Section content -->
  </section>
</component>
```

*Add an Immunization Request for Clinical Guidance module based on the Immunization Content Module*

### 6.1.1.Q Immunization Request for Clinical Guidance

The Immunization Request for Clinical Guidance module is intended for use with the Request for Clinical Guidance integration profile to support requests for clinical guidance for immunization care. It expands upon the Immunization Content module, and requires that an Immunization Care Plan be present. This care plan describes the immunizations that are expected to be given and may identify the protocols that are expected to be followed in the development of the care plan.

This module shall contain a required immunization care plan proposal. The immunization care plan proposal shall contain a required proposal for immunization entry. The effective time of

the proposal shall be present and indicates the time range of the request for immunizations to be given. The proposal may include a reference to a specific guideline to indicate that this proposal is intended to comply with the specified guideline.

<p><b>Immunization Care Plan</b></p> <p>The care plan shall be present to document the schedule of vaccinations that are proposed for the the patient. The care plan shall include Immunization entries in proposal mood describing the immunization plan to be developed by the Clinical Decision Support Service Actor. It may include a reference to a specific guideline in definition mood to indicate the guideline that should be conformed to.</p>	R	TBD
--	---	-----

*Add an Immunization Clinical Guidance Response module based on the Immunization Request for Clinical Guidance module.*

### 6.1.1.Q Immunization Clinical Guidance Response

The Immunization Clinical Guidance Response module shall include all content found in the the request for clinical guidance. It may include optional alerts applied to existing clinical information which provide an evaluation of the effectiveness of the immunizations given or identify other relevant clinical data that could impact the immunization care plan.

The proposed immunization plan in the response should include at least one suggested list of encounters in which immunizations will be provided. Each encounter will contain one or more immunization activities in proposal mood to indicate the proposed care plan. These activities should include the immunization to be given.

*Add the Immunization Care Plan to the end of Section 6.1.3.6*

### 6.1.3.6.Q Immunization Care Plan

<b>Template Id</b>	TBD	
<b>Parent Template</b>	1.3.6.1.4.1.19376.1.5.3.1.1.18.3.1	
<b>General Description</b>	The care plan shall be present to document the schedule of vaccinations that are proposed for the the patient. The care plan shall include Immunization entries in proposal mood describing the immunization plan to be developed by the Clinical Decision Support Service Actor. It may include a reference to a specific guideline in definition mood to indicate the guideline that should be conformed to.	
<b>LOINC Code</b>	<b>Opt</b>	<b>Description</b>
18776-5	R	TREATMENT PLAN
<b>Entries</b>	<b>Opt</b>	<b>Description</b>
TBD	R	<p>Immunization Plan Entry</p> <p>At least one Immunization Plan Entry shall be present in Proposal mood to indicate what the proposed care is for the patient. Other Immunization Plan entries may appear in intent mood to indicate the current plan.</p>

*Update the Immunization Entry in section 6.1.4.17.12 to use the Product Entry directly, instead of through reference to consumable under medications.*

**6.1.4.17.12 <consumable typeCode='CSM'>**

See [consumable](#) under [Medications](#). The <consumable> element shall be present, and shall contain a <manufacturedProduct> entry conforming to the [Product Entry](#) template found in PCC TF-2:6.14.19.

*Add the Immunization Plan Entry to the end of Section 6.1.4*

**6.1.4.Q Immunization Plan Entry**

An immunization plan entry is used to record the intended or proposed immunization activities. Activities in proposal mood are suggestions for care or treatment that are being proposed for subsequent decision making (these might appear as an input to, or output from clinical decision support). Activities in intent mood describe the currently accepted “plan”, and are part of the care activities intended for the patient.

```
<substanceAdministrationIntent typeCode='SBADM' moodCode='INT|PRP' negationInd='true|false'>
  <templateId root='2.16.840.1.113883.10.20.1.25' />
  <templateId root='TBD' />
  <id root='' extension='' />
  <code code='IMMUNIZ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActCode' />
  <text><reference value='#xxx' /></text>
  <statusCode code='completed' />
  <effectiveTime><low value='' /><high value='' /></effectiveTime>
  <routeCode code='' codeSystem='' codeSystemName='RouteOfAdministration' />
  <approachSiteCode code='' codeSystem='' codeSystemName='HumanSubstanceAdministrationSite' />
  <doseQuantity value='' units='' />
  <consumable typeCode='CSM'>
    :
    .
  </consumable>
  <!-- An optional entry relationship that identifies the immunization series number -->
  <entryRelationship typeCode='SUBJ'>
    <observation classCode='OBS' moodCode='EVN'>
      <templateId root='2.16.840.1.113883.10.20.1.46' />
      <code code='30973-2' displayName='Dose Number'
        codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC' />
      <statusCode code='completed' />
      <value xsi:type='INT' value='' />
    </observation>
  </entryRelationship>
  <!-- Optional <entryRelationship> element containing comments -->
</substanceAdministrationIntent>
```

Note: The CCD represents the observation of a series number in EVN mood, as we have shown above. However, when the immunization is “intended” to be the second of a series, we do not believe this is the correct mood code. How should this be addressed?

**6.1.4.Q.1 <substanceAdministrationIntent typeCode='SBADM' moodCode='INT|PRP' negationInd='true|false'>**

This entry represents the intent or proposal to administer (when negationInd=false), or not administer (when negationInd = true) an immunization to a patient.

**6.1.4.Q.2 <templateId root='2.16.840.1.113883.10.20.1.25'/>**

This element represents a plan of care activity for the the patient, and so shall conform to the CCD Plan of Care activity template.

**6.1.4.Q.3 <templateId root='TBD'/>**

This element is an instance of an IHE PCC Immunization Care Plan entry, and shall indicate that conformance by inclusion of the template identifier given above.

**6.1.4.Q.4 <id root="" extension=""/>**

Each plan of care activity shall contain an identifier.

**6.1.4.Q.5 <code code='IMMUNIZ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActCode'/>**

An immunization care plan entry shall include a code identifying that this is in reference to an immunization. If no coding system is required by the source, simply record as shown above. See PCC TF-2:6.1.4.17.5 for additional coding systems that may appear in this element.

**6.1.4.Q.6 <text><reference value='#xxx'/></text>**

In a CDA document, the URI given in the value attribute of the <reference> element points to an element in the narrative content that contains the complete text describing the immunization activity. In an HL7 message, the content of the text element shall contain the complete text describing the immunization activity.

**6.1.4.Q.7 <statusCode code='active'/>**

The status code shall be active for all active proposals or intentions.

**6.1.4.Q.8 <effectiveTime><low value=""/><high value=""/></effectiveTime>**

The <effectiveTime> element should be present to indicate time interval over which the suggested activity should take place. Intervals shall be represented using the IVL\_TS data type.

**6.1.4.Q.9 <routeCode code="" codeSystem="" codeSystemName='RouteOfAdministration'/>  
<approachSiteCode code="" codeSystem="" codeSystemName='HumanSubstanceAdministrationSite'/>  
<doseQuantity value="" units=""/>**

The <routeCode>, <approachSiteCode> and <doseQuantity> elements are used to represent additional attributes of the proposed care. When present these elements must be consistent with the rules for these elements specified in PCC TF-2:6.1.4.16 Medication Entry and 6.1.4.17 Immunization Entry.

**6.1.4.Q.10 <consumable typeCode='CSM'>**

The <consumable> element shall be present, and shall contain a <manufacturedProduct> entry conforming to the Product Entry template found in PCC TF-2:6.14.19.

```

6.1.4.Q.11 <entryRelationship typeCode='SUBJ'>
  <observation classCode='OBS' moodCode='EVN'>
    <templateId root='2.16.840.1.113883.10.20.1.46'/>
    <code code='30973-2'
      displayName='Dose Number'
      codeSystem='2.16.840.1.113883.6.1'
      codeSystemName='LOINC'/>
    <statusCode code='completed'/>
    <value xsi:type='INT' value=''/>
  </observation>
</entryRelationship>

```

The immunization plan of care entry may contain a single entry relationship identifying the immunization series number. This entry shall use the CCD template (2.16.840.1.113883.10.20.1.46) defined for that purpose.

**6.1.4.Q.12 <!-- Optional <entryRelationship> element referencing guidelines -->**

*Add the Alert Entry to the end of Section 6.1.4*

**6.1.4.R. Alert Entry**

The alert entry is an observation whose subject is any clinical statement. This entry is to indicate additional information about that clinical statement that may be of relevance to the care being described. For example, some treatment plans may be contraindicated by other conditions or treatments co-occurring. For example, the use of aspirin and a blood thinning agent at the same time may not be recommended. The alert entry is provided to record these sorts of annotations. An example use of this entry is in a vaccine forecast system, where the clinical decision support service might use the alert entry to identify vaccinations that are considered to be of reduced effectiveness, and which therefore are not used in making a new vaccination schedule for the patient.

```

<entryRelationship typeCode='SUBJ' inversionInd='true'>
  <templateId root='TBD'/>
  <observation classCode='OBS' moodCode='EVN'>
    <id root='' id=''/>
    <code code='' displayName='' codeSystem='' codeSystemName=''/>
    <text><reference value='#ref-1'/></text>
  </observation>
</entryRelationship>

```

**6.1.4.R.1 <entryRelationship typeCode='SUBJ' inversionInd='true'>**

The alert has a preexisting entry as its subject (typeCode=SUBJ).

**6.1.4.R.2 <templateId root='TBD'/>**

This alert complies with the rules specified in the PCC technical framework for alerts, and so must include the templateId specified above.

**6.1.4.R.3 <observation classCode='OBS|ALRT' moodCode='EVN'>**

An alert is an observation that has occurred (moodCode=EVN). The HL7 classCode value of ALRT shall be used where permitted (e.g. in an HL7 message). Where not permitted, the classCode shall be OBS (e.g., in CDA Document).

**6.1.4.R.4 <id root=" id=""/>**

Each alert observation may have an identifier.

**6.1.4.R.5 <code code=" displayName=" codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActDetectedIssueCode'/>**

Each alert observation shall have a code identifying the type of issue detected. The HL7 ActDetectedIssueCode value set (2.16.840.1.113883.1.11.16124) is one possible source of codes for these issues.

**1.1.6.2.1 <text><reference value='#ref-1'/></text>**

The text of the observation should provide some human readable explanation for the alert. In a CDA document, this would appear within the narrative of the clinical document, and so would be referenced by the alert. In an HL7 Version 3 message, this text would appear in the <text> element of the alert entry.

*Add the following Appendix to Volume II*

## **Appendix F - Transforming CDA Documents to Care Record Messages**

The HL7 Clinical Document Architecture (CDA) provides a mechanism to record an XML document that can be used as a persistent record of care acts documented during a clinical encounter. Many profiles developed by the IHE Patient Care Coordination Technical committee are based upon the CDA and are used in that fashion. However, there are other exchanges that may not need the overhead of a clinical document, and which would be better expressed in a clinical message. The HL7 Care Record standard describes one such message that has already been used in several IHE PCC profiles, including the QED and CM profiles, and now the Query for Clinical Guidance (QCG) profile.

One example of the case where the content of a clinical document could be used in a message is in the use of clinical decision support for forecasting immunizations. The Query for Clinical Guidance profile describes a pair of messages that can be exchanged to integrate a healthcare application with a clinical decision support service. The content needed for an immunization

forecasting service is already defined in the IHE PCC Immunization Content (IC) profile. This profile provides all the information needed for an immunization forecasting system, but does so as a clinical document. What is needed to support immunization forecasting as a service is a way to translate that document content into an HL7 Version 3 Care Record message.

This appendix describes how a CDA document can be transformed into a message conforming to the same guidelines as the CDA document.

The intent of the HL7 Version 3 standard is to provide semantic interoperability. An application that is aware of the HL7 Reference Information Model, and the data types and underlying vocabulary should readily be able to interpret the meaning of an activity regardless of the particular HL7 V3 standard used to describe it. In practice, this requires a great deal of HL7 specific knowledge regarding modeling and semantics.

A Clinical Document provides documentation of (see the documentationOf class in the CDA [R-MIM](#)) one or more service events (see ServiceEvent) performed by a healthcare service provider (see the performer connected to the ServiceEvent). The HL7 Version 3 Care Record message describes a service event that is the "provision of care" (see CareProvisionEvent in the [Care Record DSTU](#)) by a service provider (see performer attached to CareProvisionEvent). These two standards greatly overlap in their content.

The Author, DataEnter, and RecordTarget classes of the CareProvisionEvent are mapped to the Author, DataEnter, RecordTarget classes of the CDA (and visa-versa). Many other classes map one-for-one from one to the other, or nearly so.

## F.1 Mapping the CDA Header to the Care Record Message

The following table shows the mapping from the classes found in the CDA Header [found in this diagram](#) to the Care Record classes [found here](#). The tables use XPath expressions to identify the classes in each component.

CDA	Care Record	Notes
/ClinicalDocument/documentationOf/serviceEvent	/CareProvisionEvent	The CareProvisionEvent must have the classCode PCPR. A CDA document can describe service events other than those with a classCode of PCPR. Note: The Continuity of Care Document service event uses the classCode of PCPR in the CDA Service event
/ClinicalDocument/documentationOf/serviceEvent/performer	/CareProvisionEvent/performer	Technically this is already addressed in the mapping above, however, we wanted to be clear that the performer of the Care Provision Event would also appear as the performer of the serviceEvent in the CDA document
/ClinicalDocument/recordTarget	/CareProvisionEvent/recordTarget	The Care Record allows for the record target to be the patient or any other entity maintained by the organization (e.g., a piece of equipment or a service location). CDA only

		allows patients to be record targets. Please note that CDA also does not support subject on the ClinicalDocument act, but it may be used inside entries in the clinical document.
/ClinicalDocument/author/assignedAuthor	/CareProvisionEvent/author/assignedParty	CDA Authors are persons or devices. Care Record allows persons and organizations to be recorded as an author, but not devices. There are other fine details as to what is allowed in the content, but the essential information (id, code, addr, telecom, and person name) are all recorded using the same XML
/ClinicalDocument/dataEnterer/assignedEntity	/CareProvisionEvent/dataEnterer/assignedPerson	These two are nearly the same, the CDA uses a more tightly constrained form.
/ClinicalDocument/authenticator	/ClinicalDocument/legalAuthenticator	Care Record supports recording of a verifier (classCode=VRF), authenticator (AUTHEN), or legal authenticator (LA) in one class. CDA uses different classes to distinguish between the authenticator and legal authenticator. Strictly speaking, a CareRecord verifier with classCode VRF must be represented in CDA using the /ClinicalDocument/participant with a classCode set to VRF, but the other two cases map directly into more specific CDA classes
/ClinicalDocument/informationRecipient	/CareProvisionEvent/PrimaryInformationRecipient	The Care Record class is more restricted. It only holds <i>primary</i> information recipients, whereas the CDA class can hold primary and secondary information recipients
/ClinicalDocument/inFulfillmentOf/order	/CareRecord/inFulfillmentOf/careProvisionRequestOrPromise	A CDA can fulfill a wider variety of orders than are allowed for in a CareProvisionRequest, and so allows for code and and priorityCode to be sent in addition to the order identifier.

## F.2 Mapping the CDA Body to the Care Record Message

The CDA Body requires just a little bit of explanation. The body of a CDA document is composed of one or more sections, each of which may be composed of additional sections or entries as clinical statements. A section is a special kind of organizer used within documents. It need not be preserved in the Care Record Message unless the use case requires similar information to be carried together. However, many implementors will want to do so in order to preserve the structure of the CDA document.

A simple expedient resolves this issue, as each section in the CDA document can be represented as an organizer in the Care Record message using the same classCode DOCSECT. The only determination that needs to be made is whether this section should be related through the pertinentInformation1, pertinentInformation2, pertinentInformation3, or component act relationships of the CareProvisionEvent. Since the CDA document does not distinguish between

informative vs. pertinent relationships, we can rule out pertinentInformation1 and pertinentInformation2, requiring that we only need to decide whether to place the information in the component or pertinentInformation3 relationship. We can easily determine which information should appear in the care plan by inspection of section.code. If section.code uses the LOINC code 18776-5 TREATMENT PLAN then the information belongs in component, otherwise, it belongs in pertinentInformation3.

### F.2.1 What happens to section.text

Since the purpose of this transformation is to put the machine readable information into a message so that clinical decision support algorithms can be applied, the text associated with the section will not be transformed. If you really wanted to maintain the text in the message, you could incorporate it into an act that was a component of the organizer, using a special code to identify the act containing the text.

### F.3 Mapping CDA Entries to clinical statements in the Care Record

The following table shows the mapping from the classes found in the CDA clinical statement model to clinical statements in the Care Record DSTU. As you can see, almost all classes use identical names in the two models. The tables use XPath expressions to identify the classes in each component. Note that since the section.text is no longer present, references to text in acts or originalText in codes that point to text in the section of the CDA can no longer be pointed to, and must be copied.

CDA	Care Record	Notes
observation	observation	
observation/referenceRange	observation/referenceRange	
<i>any clinicalStatement/precondition</i>	<i>any CareEntry'/conditions</i>	Care Record supports more than just precondition (PRCN) in the conditions relationship.
substanceAdministration	substanceAdministration	
substanceAdministration/consumable	substanceAdministration/consumable	
supply	supply	
supply/product	supply/product	
procedure	procedure	
encounter	encounter	
act	act	
organizer	organizer	

<i>any clinicalStatement/ entryRelationship</i>	<i>any CareEntry/targetOf</i>	Care Record supports a wider model than CDA.
---	-------------------------------	--

This mapping can be used in the other direction to take information from a Care Record message (e.g., as a result of a QED query) and turn it into a CDA document.