IHE Patient Care Coordination Technical Framework Supplement

Multiple Content Views
(MCV)

Draft for Public Comment

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Foreword

This is a supplement to the IHE PCC Technical Framework V9.0. Each supplement undergoes a
30 process of public comment and trial implementation before being incorporated into the volumes of the Technical Frameworks.

This supplement is published on June 6, 2014 for public comment. Comments are invited and may be submitted at http://www.ihe.net/PCC_Public_Comments. In order to be considered in development of the trial implementation version of the supplement, comments must be received
35 by July 5, 2014

This supplement describes changes to the existing technical framework documents.

"Boxed" instructions like the sample below indicate to the Volume Editor how to integrate the relevant section(s) into the relevant Technical Framework volume.

Amend Section X.X by the following:

40 Where the amendment adds text, make the added text **bold underline**. Where the amendment removes text, make the removed text **bold strikethrough**. When entire new sections are added, introduce with editor's instructions to "add new text" or similar, which for readability are not bolded or underlined.

45 General information about IHE can be found at: http://ihe.net.

Information about the IHE Patient Care Coordination domain can be found at: http://ihe.net/IHE_Domains.

Information about the organization of IHE Technical Frameworks and Supplements and the process used to create them can be found at: http://ihe.net/IHE_Process and
50 http://ihe.net/Profiles.

The current version of the IHE IT Infrastructure Technical Framework can be found at: http://ihe.net/Resources/Technical_Frameworks.

55

CONTENTS

Introduction to this Supplement

This profile introduces new options for the PCC Content Creator and Content Consumer Actors.

115 ## Open Issues and Questions

MCV 01: (11/28/13) What to do about requests or behaviors that cannot be easily supported by the existing CDA schema? For example, CDA header elements do not have a styleCode attribute or other XML attributes that can be used for tagging content.

Closed Issues

120 MCV 02: (12/04/13; closed 01/08/14) What attributes are available for <?xml-stylesheet in order to identify in a useful manner the role of this style sheet?

http://www.w3.org/TR/xml-stylesheet/#the-xml-stylesheet-processing-instruction

title

Gives the title of the referenced style sheet in a style sheet set. No constraints
125 beyond those of the PseudoAttValue production are placed on the value.

alternate

If the value is "yes", it indicates that the referenced style sheet is an alternative style sheet, and documents **must** also specify the title pseudo-attribute with a non-empty value. If specified, documents **must** set the value to either "yes" or
130 "no".

(probably need a CP for the style sheets section where is mentions alternate but not title; from V2 6.3.1.4.1: To record the style sheet within a CDA Document that might be used in both an XDS and XDM environment, more than one stylesheet processing instruction is required. In this case, all style sheet processing instructions included MUST include the alternate='yes' attribute.)

135

For 01/08/14 – propose close this issue

MCV 03: (12/04/13; closed 02/11/14) Transactions – do we use a Render Content transaction (between Content Consumer and Content Renderer)?

140 We have also had conversations on what to call the new Actor and Transaction, and even whether or not we need these. Consider the current definition of Content Consumer from Appendix A: "A Content Consumer Actor is responsible for viewing, import, or other processing of content created by a Content Creator Actor", which seems pretty broad.

145 See also the View Option of PCC TF-2: 3.1.1, where we see Content Consumer shall be able to…..Render the document for viewing. This goes further to describe the use of stylesheet processing instructions, which begins to sound like we do not need a new actor. We will need to be aware if a MCV Actor requires changes to the existing text about Document Consumer (this is MCV 06 below).

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As the Content Consumer is responsible for rendering the document for viewing, the proposed actor name was changed from Content Renderer to Content Generator, but maybe that is not quite correct. Consider other names: HTML Generator, Human Readable Content Creator, …

155

12/18/13 – discussed again on PCC call and the consensus is: the existing Content Consumer is the actor we want to use. We do not need a new actor nor a new transaction. Instead, we should consider:

- A new Content Consumer Option

160
- Updates to some of the text in 6.3.1.1.4 Style Sheets, preserving the current behavior of using the first working style sheet, but adding text for the new option about allowing for selection of which stylesheet processing instruction to use.

Also discussed whether or not there should be a new option for the Content Creator and
165 decided that the ability to tag content and export multiple stylesheet processing instructions already exists so no new option is needed.

For 01/08/14 – propose close this issue

170 MCV 04: (12/04/13; closed 02/11/14) Are there Options? On the Content Creator for support of the various category of concept to be supported (e.g., Branding Option, Patient Demographics Option …)?

The proposal to date (12/11/13) is to have Document Consumer and Document Source both support a to-be-written content module, called View Tagging below…..however, we
175 should discuss further because this would not be your typical document, section, or entry level content module.

Options – would it be useful to have named options, maybe even instead of a content module, for Document Source to declare support for according to their capabilities and Document Consumer to support all? Example: my Document Source supports the Branding
180 Tagging Option, and the Patient Contacts Show/Hide Option, but not the option for Assessed Items.

We had a discussion on the table from the Detailed Proposal and whether or not the Categories would be the named options.

12/18/13 discussed during the PCC call and decided that not to present options like
185 this. PCC Content Creator Options to date are about document format. Trying to enumerate and continue to update a list of tagging options would not serve us well. We will provide guidance on the categories of issues catalogued as a part of the Multiple Content Views, in section X.4.2.1.2.1

For 01/08/14 – propose close this issue

_____

190 MCV 05: (12/04/13; closed 02/12/14 as no new actor) Duties and processing power of the Content Renderer? Is it simple as dirt and just can return HTML based upon application of a given stylesheet processing instruction? Does it have CDA knowledge and an ability to Show/Hide, etc. from a given rendering of HTML?

195 MCV 06: (12/04/13; closed 02/12/14 with CP-PCC-0184 and some slightly different wording than below) Content Consumer – any changes needed to the definition in Appendix A, or to the rules for View Option (PCC TF-2: 3.1.1 View Option) or stylesheet processing (6.3.1.1.4 Style Sheets)?

> 12/18/13 Discussed on PCC call in light of MCV 02 and MCV 03.

200 > > Identified what looks like a typo in Vol 1, 3.4.1.1 View Option

> > A Content Creator Actor should provide access to a style sheet that ensures consistent rendering of the medical document content as was displayed by the Content Consumer Actor.

205 > > SHOULD be: A Content Creator Actor should provide access to a style sheet that ensures consistent rendering of the medical document content as was **attested to by the Content Creator** Actor.

> > Needs to be a CP (CP prepared for discussion 01/08/14)

210 MCV 07: (3/12/14; closed 4/23/14 with decision to add the table to chapter 5.) Do we specify a value set for styleCode according to the Categories we list, e.g., Empty Section, Assessed, Full/Partial Text? See 3.1.5.1.

> > 4/9/14 – discussion indicates some interest in pursuing this; needing a good solid list; thinking the existing categories list is not sufficient.

215 > > 4/16/14 – a couple of ideas on what such a list might look like.

a) using just the patient view / concepts we have discussed and used in the profile, we might have a list like this:

xEmptySection	the section is empty
xAssessed	this content is part of an item assessed/evaluated/discussed during the recent visit
xDetail	this content is a level of detail
xDate	the content is a date
xDateTime	the content is a date with a time component
xTime	the content represents time

b) using a different approach, where we might want to define a rule for the styleCode names, and
220 not an exhaustive list, such as use the x prefix followed by the CDA discrete element node name (and maybe we extend this even further…) we might have a list like this:

xid	an id element for an item
xcode	a code value for an item
xstatusCode	the statusCode value of an act
xeffectiveTime	the single effectiveTime value
xeffectiveTimelow	the low value of an effectiveTime
xeffectiveTimehigh	the high value of an effectiveTime
xparticipant	a generic participant
xparticipantCustodian	a Custodian participant
xparticipantVerifier	a Verifier participant
xaddr	a generic address
xtelecom	a generic telecom element
xAdvanceDirectiveType	a value from the … value set

MCV 09: (04/22/14 closed 04/29/2014) Closed: decided this was still the CDA rule

Are the x's needed for styleCode values not predefined in the CDA R2 specification? Ask Keith. Check most recent HL7 CDA R2 – there may have been errata since the copy I have been using.

The value set is drawn from the HL7 styleType vocabulary domain, and has a CWE coding strength

Local extensions to the styleType vocabulary domain must follow the following convention: [x][A-Za-z][A-Za-z0-9]* (first character is "x", second character is an upper or lower case A-Z, remaining characters are any combination of upper and lower case letters or numbers).

MCV 08: (04/03/14; closed 04/30/2014) Closed: we have text defining where extensions are needed.

Do we try to produce a complete catalog of discrete entry components that require CDA R2 extensions in order to link the component to the human readable text? See section 3.1.5.

235

Volume 1 – Profiles

Domain-specific additions

None

240 | *Add to Section X*

X Multiple Content Views (MCV) Profile

This profile provides guidance on how text in CDA documents may be tagged to achieve different rendering behaviors. This allows one document to serve different needs based upon the requirements of the person viewing the document. The viewing requirements of a patient differ from the requirements of a healthcare provider. The profile identifies many of the requirements expressed by patients, classifies these requirements, identifies the rendering behavior associated with each, and provides guidance on how to tag CDA content in order to bind it to an identified behavior. Use of this profile allows one CDA document to serve the needs of different Document Consumers.

X.1 MCV Actors, Transactions, and Content Modules

This section defines the actors, transactions, and/or content modules in this profile. General definitions of actors are given in the Technical Frameworks General Introduction Appendix A at http://www.ihe.net/Technical_Frameworks (a work in progress).

Figure X.1-1 shows the actors directly involved in the MCV Profile and the direction that the content is exchanged.

A product implementation using this profile must group actors from this profile with actors from a workflow or transport profile to be functional. The grouping of the content module described in this profile to specific actors is described in more detail in the "Required Actor Groupings" Section below.

Figure X.1-1: MCV Actor Diagram

The MCV Profile introduces actor options for Content Creator and Content Consumer. These options are used in addition to the Content Creator and Content Consumer Options defined by other Patient Care Coordination profiles.

X.1.1 Actor Descriptions and Actor Profile Requirements

X.1.1.1 Content Creator

A Content Creator that supports the MCV Profile shall support the Narrative Formatting Option, and may support the Entry Reference Tagging Option. See PCC TF-2: 3.1.5 and 3.1.6.

X.1.1.2 Content Consumer

275 A Content Consumer that supports the MCV Profile shall support the Narrative Formatting
Option, and may support the Entry Reference Tagging Option. See PCC TF-2: 3.1.5 and 3.1.6.

X.2 MCV Actor Options

Options that may be selected for each actor in this profile, if any, are listed in the Table X.2-1.
Dependencies between options when applicable are specified in notes.

280

Table X.2-1: MCV - Actors and Options

Actor	Option Name	Reference
Content Creator	Narrative Formatting	Required X.2.1
	Entry Reference Tagging	Optional X.2.2
Content Consumer	Narrative Formatting	Required X.2.1
	Entry Reference Tagging	Optional X.2.2

X.2.1 Narrative Formatting

A Content Creator that implements the Narrative Formatting Option provides the capability for a
285 Content Consumer to display different views by including style attribute values for use by style
sheets. The human readable text in CDA allows a style attribute containing one or more values
on content. The Content Creator may provide a style sheet allowing selection of different views,
or multiple style sheets in order for a Content Consumer to achieve optimal display, or it may
rely upon the Content Consumer's rendering of the style attributes.

290 A Content Consumer that implements the Narrative Formatting Option uses document style
values to provide different views of a document. If multiple style sheets have been supplied for a
document by a Content Creator, the Content Consumer allows the user to select from the set of
alternates to change the view of the document.

X.2.2 Entry Reference Tagging

295 A Content Creator that implements the Entry Reference Tagging Option produces CDA
documents that contain narrative text linked with machine readable entry elements. This supplies
semantic context in the narrative. This entry reference tagging may be used by style sheets to
determine what human readable text to display.

A Content Consumer that implements the Entry Reference Tagging Option uses the narrative
300 links to provide semantic based formatting options to the end user during the view operation.
Essentially, this means that there are choices that the end user can make to change what is
displayed for them according to their preferences.

X.3 MCV Required Actor Groupings

305 **Table X.3-1: MCV - Required Actor Groupings**

MCV Actor	Actor to be grouped with	Reference	Content Bindings Reference
Content Creator	None		
Content Consumer	None		

X.4 MCV Overview

This section describes how document sections and narrative text have been tagged by Content Creators in order to be selectively displayed by Content Consumers. Examples below are drawn
310 from requests and requirements from existing implementations. Tagging the narrative content at different levels, such as section or within narrative text for an item, allows formatting based upon semantic concepts.

X.4.1 Concepts

Exported documents contain data and details based upon the requirements of profiles, but the
315 representation and rendering of this data changes based upon different needs and audiences. Patients, providers and even systems each have different requirements for the content and rendering of the content in exported documents.

Various end users viewing CDA content are interested in specific portions of the available content and may not have immediate need to access other portions of the content. In order to
320 streamline their workflows, there is a desire to be able to semantically identify narrative content in such a way as to allow customized user views to be implemented systematically between systems producing and consuming documents.

For example, patients have requested simple views of visit summaries, and want to know information addressed during the visit such as problems assessed, interventions (medications
325 renewed and prescribed, results, etc.), plans/goals, etc. Sometimes they do not want to see empty sections, or sections that contain or indicate "no information". Another example would be where, in displaying information about immunizations, the initial display might only contain the essential information about the immunization, but more detail, such as lot number and expiration date, could be shown when necessary.

330 Providers may also desire such a capability, while retaining the need to provide safe care and satisfying patient requests.

X.4.1.1 Categories of Content Tagging, with examples

The following categories of content tagging come from existing requests. Some of these categories of requests are further profiled by the Narrative Formatting Option.

335

Table X.4.1.1-1: Content Tagging Categories

Category	CDA Location	Further Profiled?
Branding	n/a	No
Patient Demographics	CDA Header	No
Patient Contacts	CDA Header	No
Document Sections	CDA Section	Yes
Changed / Assessed Clinical Content	CDA Section Text and optionally CDA Entry	Yes
Full or Partial Item Narrative	CDA Section Text and optionally CDA Entry	Yes
Text Classifying	CDA Section Text and CDA Entry	Yes

X.4.1.1.1 Branding

340 The simple request to show or hide an organizational logo may an important requirement when organizational identification is needed to support existing practice workflows. For example, a logo appearing on a printed version of a document helps the consumer to quickly identify the document source.

This may be controlled entirely by alternative style sheets; no further constraints or guidance is provided in this profile.

345 X.4.1.1.2 Patient Demographics

Do not show patient address (some patients have commented: "I know where I live"). Show demographics only if changed since a particular date.

This is an open issue because the CDA R2 has no attributes that can be used to tag this content as when an address, phone number, etc., were changed.

350 The show/hide of patient address may be controlled entirely by alternative style sheets; no further constraints or guidance is provided in this profile.

X.4.1.1.3 Patient Contacts

The request to show or hide some or all of a patient's contacts may be controlled entirely by alternative style sheets; no further constraints or guidance is provided in this profile.

355 X.4.1.1.4 Document Sections

Omit Sections that are empty, or sections that contain "no information". This may be controlled by a style sheet in conjunction with a tagging the narrative text elements of a section.

X.4.1.1.5 Changed / Assessed Clinical Content

Show only the problems assessed this visit. Do not show historical content (such as family, social, smoking history) that was not addressed during this visit.

Show only the medications renewed or prescribed or changed during this visit.

Show only the vital signs taken at this visit or related to other vitals (e.g., trends).

This may be controlled by a style sheet in conjunction with a tagging of the narrative text of the changed items within the list of items in the narrative text.

X.4.1.1.6 Full or Partial Item Narrative

Sometimes patients do not want to see ICD or other codes assigned to problems.

Showing full item detail can be accomplished by a style sheet that presents all elements. Omitting any specifics within text, such as the value of an ICD code, may be controlled by a style sheet in conjunction with tagging an element within narrative text.

However, there is more semantic information available when discrete entries elements are linked to the related narrative text via a text reference. The discrete code entry for the ICD code, for example, can reference the narrative text for the code, thus clearly identifying that text as belonging to the (code, codeSystem).

X.4.1.1.7 Text Classifying

Show Dates as links for example, add this encounter date to my calendar

Identify the name of a thing, e.g., a medication name, a physical quantity.

These examples, and many similar examples of pieces of the narrative text, can be referenced from discrete entry elements and thus semantic information is provided about the piece of the narrative text.

X.4.2 Use Cases

X.4.2.1 Use Case #1: Visit Summary

This use case involves a patient visiting their Primary Care Physician for a routine visit. At the end of the visit, the PCP produces a visit summary, which is shared with the patient.

X.4.2.1.1 Visit Summary Use Case Description

This use case involves a patient visiting their Primary Care Physician for a routine visit. The patient arrives at the clinic with a list of problems that he wishes to discuss. The patient's sleep apnea, an existing condition, is getting worse. He has also developed frequent headaches. The PCP makes note of these new problems, and performs a physical examination. He notes that the patient's weight has increased since his last visit, which may be an aggravating factor. They agree to create a new care plan goal to reduce the patient's weight by ten percent and re-evaluate

the condition when that goal has been reached before considering any more invasive treatment. In the meantime, the PCP prescribes an analgesic to help with the headaches.

395   The PCP produces a visit summary document at the end of the visit and shares it with the patient, as he wants to provide his patient with a meaningful recap of what they discussed during the visit. This document contains the problems, plans and goals, and medications discussed during this visit. However, due to the requirements of the document type specification it also contains other medications and problems for that patient, along with other types of information, such as immunizations, that were not addressed.

400   The data elements that are relevant to the most recent visit are tagged so that the patient's PHR system can identify them. When the patient logs in to their PHR or patient portal, the full view of the visit summary document is displayed, so that the patient can verify that the information is all correct. Subsequently, the patient can choose to select a view consisting of only those elements that are relevant to his most recent concerns.

405 **X.4.2.1.2 Visit Summary Process Flow**

PCP
(Content Creator)

The Patient
(Content Consumer)

Share Content

See full view

Selects concise
view

Selects another view

Figure X.4.2.1.2-1: Basic Process Flow in MCV Profile

Pre-conditions:

410 A Content Creator using the Narrative Formatting Option shares content containing semantically
tagged narrative text. The first style sheet for the document presents the full view of the
document. There may be additional, alternate style sheets.

Main Flow:

The Content Consumer initially renders content using the first style sheet, thus producing a full
415 view of the document. The Content Consumer provides the ability to see that there are multiple
style sheets and provides the ability to render the content using any of the alternate style sheets.

The patient selects a style sheet that presents a concise view, possibly followed by selection of an alternate style sheet.

Post-conditions:

420 Content from one document has been shared and viewed as a full view, a concise view, and /or possibly a number of other alternative views.

X.4.2.2 Use Case #2: Referral to Specialist

In referring a patient to a specialist, a clinical referral document sometimes contains content that clinicians within that specialty do not typically require. In this case, the specialist may choose a

425 customized view that focuses on the information that is relevant.

X.4.2.2.1 Referral to Specialist Use Case Description

This use case involves the referral of a patient from their Primary Care Physician to a specialist. The patient, who is a diabetic, arrives at the clinic for a yearly physical. During the physical exam, the PCP notes some signs of irregularities in the patient's eyes. He decides to refer the

430 patient to an Ophthalmologist for further investigation of the issue.

The PCP produces a referral document at the end of the visit and shares it with the specialist. This document contains the problems, physical exam, allergies, procedures, lab results and medications for the patient. All of the document sections and narrative text have been tagged in order to be selectively displayed.

435 The Ophthalmologist EMR system identifies those elements that are of interest to the specialist by comparing the codes in each section with the pre-defined list the specialist has indicated are of interest to him. When he views the referral document, the summary view of the document with only the relevant information is displayed by default. The full record view can be selected and displayed if desired.

440 **X.4.2.2.2 Referral to Specialist Process Flow**

PCP
(Content Creator)

The Ophthalmologist
(Content Consumer)

Share Content

Ophthalmologist
view

Selects full
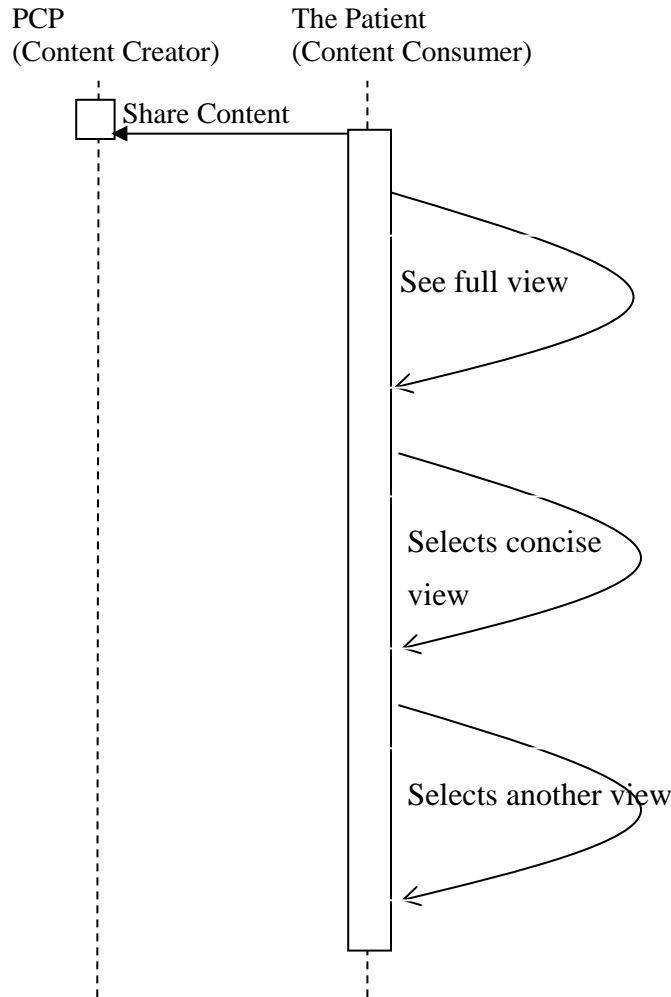
view

Selects another view
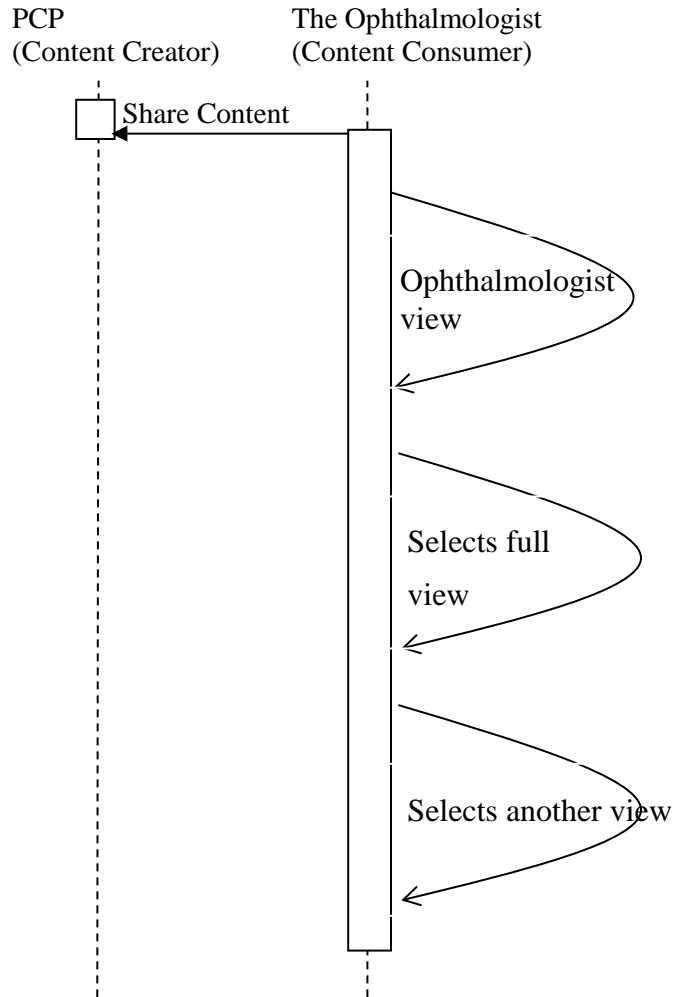
Figure X.4.2.2.2-1: Basic Process Flow in MCV Profile

Pre-conditions:

445   A Content Creator using the Narrative Formatting Option shares content containing semantically tagged narrative text. There are multiple style sheets, the first of which presents the specialists view of the document.

Main Flow:

The Content Consumer initially renders content using the first style sheet, thus producing a
450   specialist's view of the document. The Content Consumer provides the ability to see that there

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are alternate style sheets and provides the ability to render using any of the alternates. The Ophthalmologist selects a full view style sheet, possibly followed by an alternate style sheet.

Post-conditions:

Content from one document has been shared and viewed as a specialist's view, a concise view, a
455   full view, and/or possibly a number of other alternative views.

X.5 MCV Security Considerations

The full view, and the attested view if different, should always be available to resolve any questions about document content.

X.6 MCV Cross Profile Considerations

460   The Content Creator and Content Consumer Actors are those used by all PCC Profiles. The options introduced by these actors are in addition to other PCC Profile options. For example, an implementation of the XDS-MS Profile might declare use of both Narrative Formatting Option as well as Content Creator Referral Option. Similarly, an implementation might declare conformance to both the Narrative Formatting as well as the View Option.

465

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Volume 2 – Transactions

Add Section 3.1.5

3.1.5 Narrative Formatting Option

3.1.5.1 Content Creator

470 A Content Creator that supports the Narrative Formatting Option SHALL provide the capability for a Content Consumer to render different views by producing documents that use the styleCode values listed in Section 5.1.X, in addition to those documented for HL7 CDA R2, to provide Content Consumers with a consistent set of style names. The styleCode attribute may contain multiple values.

475 Content Creators MAY supply multiple style sheet processing instructions.

If multiple style sheet processing instructions are provided, the use of alternate and title attributes for all style sheets SHALL be present, as described in PCC TF- 2: 6.3.1.1.4.

3.1.5.2 Content Consumer

The Content Consumer that supports the Narrative Formatting Option SHALL be able to use the
480 PCC named styleCode values in Section 5.1.X, in addition to those defined by HL7 for CDA R2, to determine how to render the text. If multiple style sheets exist for a document, allow the user to select from the set of alternates in order to change the view of the document.

3.1.5.3 Examples

3.1.5.3.1 Document Sections

485 Omit Sections that are empty. This may be controlled by a style sheet in conjunction with a styleCode attribute value on the text element of a section. For example, XML like the following might be detected in a style sheet and display of the section might be omitted.

```
        …

        <component>
490            <section>

                    …

                    <text styleCode='xEmptySection'>

                            ...

                    </text>
495                    …

            </section>
```

```
        </component>
        …
```

3.1.5.3.2 Changed / Assessed Content

500 Do not want historical content (such as family, social, smoking history) not addressed during the visit Show only the problems assessed this visit (linked to any orders and meds)

Show only the medications renewed or prescribed or changed this visit

Show only the vital signs taken at this visit or related to other vitals (e.g., trends)

This may be controlled by a style sheet in conjunction with a styleCode attribute value on some
505 xml element with the <text> that relates to one item within the list of items in the <text>. For example, xml like the following might be detected in a style sheet and some rows might be omitted.

```
        …
        <component>
510         <section>
                …
                <text>
                    ...
                    <tr styleCode='xAssessed'>
515                     …
                    </tr>
                    <tr styleCode='xHistoric'>
                        …
                    </tr>
520         </text>
                …
            </section>
        </component>
        …
```

525

3.1.5.3.3 Full Detail

Patients do not want to see ICD codes assigned to problems.

Showing full detail can be accomplished by a style sheet that presents all elements, even when there is a styleCode attribute value that is not recognized.

530 Omitting any specifics within text, such as the value of an ICD code, may be controlled by a style sheet in conjunction with a styleCode attribute value on a <content> element within <text>. For example, xml like the following might be detected in a style sheet and the text of the ICD code might be omitted.

```
            …
535         <component>

                    <section>

                        …

                        <text>

                            ...
540                         <paragraph>loreum ipsum <content
      styleCode='xDetail'>789.254<content></paragraph>

                        …

                        </text>

                        …
545             </section>

            </component>

            …
```

3.1.6 Entry Reference Tagging Option

550 A Content Creator that supports the Entry Reference Tagging Option links some narrative content related to a CDA entry so that it can be appropriately formatted based on the semantics of the discrete entry that references it.

Text contained within a part of the narrative entry (e.g., the dose of a medication, the onset date of an allergy, the date associated with a lab result) that is also represented by a discrete entry
555 element MAY be linked to the appropriate discrete element. This is done in one of two ways, as described below.

3.1.6.1 via reference

When creating text expressing any content that has a CDA discrete element representation that allows child elements of text/reference or originalText/reference, the text is linked to the
560 appropriate discrete entry element via:

```
        …
        <reference/@value="#xxx">

        …
```

where xxx is the id attribute value used for this linkage.

565 For example, any coded concept (CD) meets this requirement. See Section 3.1.5.3.3 for an example.

3.1.6.2 via PCC namespace extension

When creating text expressing any content that has a CDA discrete element representation that does not define child elements of text/reference or originalText/reference, the text is linked to the

570 appropriate discrete entry element using the PCC namespace xmlns:pcc='urn:ihe:pcc:hl7v3':

```
<pcc:originalText xmlns:pcc='urn:ihe:pcc:hl7v3'>

    <pcc:reference value="#yyy"/>

</pcc:originalText>
```

where yyy is the id attribute value used for this linkage.

575 This would apply to any time (TS) or time interval (IVL_TS). See Section 3.1.5.3.4 for an example.

3.1.6.3 Examples

3.1.6.3.1 via reference

The following use of tagging defines the text as a code from a specific code system.

580 …

```
<component>

    <section>

        …

        <text>
```

585
```
            ...

            <paragraph>loreum ipsum <content ID='
ID0EFBLABA'>789.254<content></paragraph>

                …

        </text>
```

590
```
        …

        <entry….

        …

            <value xsi:type="CD" code="799.02"
codeSystem="2.16.840.1.113883.6.103" codeSystemName="ICD-9"
```
595
```
displayName="Hypoxemia">

                <originalText>

                    <reference value="#ID0EFBLABA"/>

                </originalText>
```

```
                        …
600                 </entry>

                    …
            </section>
    </component>
        …

605
```

3.1.6.3.2 via PCC namespace extension

An example showing classification of the onset date of an adverse reaction requires an extension to CDA R2 using the PCC namespace urn:ihe:pcc:hl7v3:

```
610     …
    <component>
        <section>
            …
            <text>
615                 ...
                    <paragraph>loreum ipsum Onset:<content ID='
ID0ECFANABA'>2011<content></paragraph>
                    …
            </text>
620         …
            <entry….
            …
                <effectiveTime>
                    <low value="2011"/>
625                     <pcc:originalText
xmlns:pcc='urn:ihe:pcc:hl7v3'>
                        <pcc:reference
value="#ID0ECFANABA"/>
                    </pcc:originalText>
630         …
            </entry>
            …
    </section>
```

```
            </component>
635         …
```

Volume 3 – Content Modules

5 Namespaces and Vocabularies

Add to Section 5 Namespaces and Vocabularies

5.1.X IHE PCC styleCode

640 Table 5.1.X-1 lists styleCode values applied for Use Case and/or clinical content rendering features. Content Creators supporting the Narrative Formatting Option are required to use values from this table. Content Consumers supporting the Narrative Formatting Option are required to render content with these styleCodes, even though the specifics are not defined. Content shall not be omitted or hidden or otherwise obstructed from view unless the Suggested Rendering and the
645 rendered view calls for such behavior.

Table 5.1.X-1: styleCode

styleCode	Description	Suggested Rendering (Hints)
xEmptySection	Section is empty	When showing other than complete content, do something special to show that the entire section is empty. See Section 3.1.5.3.1 for an example.
xHistoric	Content is Historic	When showing content that was assessed, these data should be hidden. See Section 3.1.5.3.2 for an example.
xAssessed	Content Assessed/Discussed this visit	When showing content that was assessed, these data shall be shown. See Section 3.1.5.3.2 for an example.
xDetail	Extra Detail – not necessarily for Patients	When showing patient related views, this content may be omitted. See Section 3.1.5.3.3 for an example.
xDate	Content is a Date	Show as a date.
xDateTime	Content is a Date with Time	Show as a date with time.
xCode	Content is a code from some code system.	Show as a code.
xPhone	Content is a telephone number	Show as a phone number.
xEmail	Content is an email address	Show as an email address.
xAddress	Content is a Street Address	Shows an address.
xPersonName	Content is a person name	Show as the name of a person.
xIdentifier	Content is an identifier	Show as an identifier.
xAlert	The content contains information of importance that needs to be used to alert the reader, for example level of severity considered life threatening.	Show in some manner to indicate an Alert.
xAbnormal	The content contains information that may be considered to be not within what are considered to be normal values.	Show in some manner to indicate a value that is not normal.
xHidden	Content may typically be repetitive and unnecessary to display.	Hide the content.
xLabel	The content is a label of some data, e.g., Refills:	Show content as a label.

styleCode	Description	Suggested Rendering (Hints)
xValue	The content contains a data that is a value, e.g., 98.6	Show content as a clinical item status value.
xReaction	The content represents text about a reaction.	Show content as a reaction.
xComment	The content is comment text.	Show as a comment.
xCenter	Text to be centered	Alignment should be centered.
xRight	Text to be right justified	Alignment should be right.
xLeft	Text to be left justified	Alignment should be left.
xMono	Text to be output in a monospace font	Render in a monospace font.
xHighlight	Text to be highlighted	Render with highlight.
xStrikeout	Text to be shown as strikeout	Render with strikeout.
xHR	A horizontal line is to be drawn	Render a horizontal line.
xRowNormal	For example, to indicate an odd numbered row of a table.	Render table row as normal.
xRowAlt	For example, to indicate an even numbered row of a table.	Render table row as alternate.
xIndent		Render content indented.
xSecondary	This content is of secondary importance.	Render in some manner to indicate this content is of secondary importance, for example in a lighter font color.

6 Content Modules

650 ## 6.3.1 CDA Document Content Modules

Add to Section 6.3.1.D Document Content Modules

6.3.1.D MCV Document Content Module

Clinical Documents conforming to this profile SHALL have templateId values to declare the options that are supported.

655   1. A ClinicalDocument SHALL contain templateId/@root containing the value 1.3.6.1.4.1.19376.1.5.3.1.5.5.1 to assert conformance to the Narrative Formatting Option.

    2. A ClinicalDocument SHALL contain templateId/@root containing the value 1.3.6.1.4.1.19376.1.5.3.1.5.5.2 to assert conformance to the Entry Reference Tagging Option.

660

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  <!—conforms to MCV Narrative Formatting Option→
  <templateId root="1.3.6.1.4.1.19376.1.5.3.1.5.5.1"/>
      …
665 </ClinicalDocument>
```