CM/DM CARE PLAN REQUIREMENTS

Review and Recommendations for Using the C-CDA R2.0 Care Plan Document

June 4th, 2015

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Senior Analyst, Lantana Consulting Group

Commissioned by
Blue Cross Blue Shield Association
HL7 Volunteers Presentation (90 mins)

• Welcome and Introductions (10)
• About the project (8 mins)
  - Historical perspective
  - Goal
  - Approach
  - Stakeholder Collaboration
  - Q/A (2 mins)
• Results
  - Review of Deliverables
    - Document Design Details (10 mins)
    - CDA xml walk through (10 minutes)
    - Style-sheet transformation – leveraging the design (10 minutes)
  - Summary of Key “Gap” Findings (10 mins)
  - Summary of Recommendations (5 mins)
  - Q/A (15 mins)
• Next Steps
  - Summary of Next Steps (5)
  - Q/A and Discussion (5 mins)
ABOUT THE PROJECT
CDAR2_IG_CCDA_CLINNOTES_R1_D1_2013SEP Ballot Comment
Supplemental Information

HL7 Implementation Guides for CDA Release 2: Consolidated CDA Templates for Clinical Notes, DSTU Release 2 - US Realm

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Blue Cross and Blue Shield Association
312-404-5852

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Craig Gabron, Blue Cross and Blue Shield of South Carolina
Pat Van Dyke, RN, Delta Dental
George Cole, Allscripts

The Issue

How to document and track patient enrollment in specific Care Management or Disease Management programs.

Background:

As part of providers and payers being in ACOs and the growth of Patient Centered Medical Home, there is a need to know and track which patients are in Care Management programs – to know what treatment protocol is expected, track any special patient/member co-pays or unique benefits, and to help insure it can be document and reported that the patient is in the program.
Historical Perspective

Standards development activities:

- **Consolidated CDA Release 2 (C-CDA R2.0)**
  - New Care Plan Document Template
  - Identified Missing Requirements
- **Pilot Lessons Learned**
  - S&I Framework Longitudinal Coordination of Care (LCC)
- **HL7 Patient Care**
  - Care Plan Domain Analysis Model
  - Added Story Board 8
Goals and Objectives

Goal:
• Address 19 Requirements (Table 2)
• Demonstrate possible solutions
• Identify gaps

Objectives:
• Develop a generalized approach which could fit many different views of what a Care Plan is
• Educate about C-CDA R2 Care Plan templates
• Elevate CDA usage to a higher level
• Minimize differences between CDA and FHIR
Key aspects of the approach:

- Establish a clear perspective on the subject
- Preserve design established by C-CDA R2.0
- Modify to address additional requirements
- Sketch first
Stakeholder Collaboration

Requirements identification, project input:

• Pilot experimentation and feedback
• **Input from various groups and individuals**
  • Vocabulary and structural design work
  • Collaboration with HL7 Patient Care
  • Report, sketch review and feedback
  • Experimentation with sample plan

• Sample care plans provided as informative examples
  • Shelly Spiro – Pharmacy HealthIT Collaborative
## Sample Care Plan – 20 pages

<table>
<thead>
<tr>
<th>Problem</th>
<th>Goal</th>
<th>Approach</th>
<th>Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>has COPD and is at risk for respiratory distress / failure:</td>
<td>Long Term Goal Target Date: 04/20/2015</td>
<td>Approach Start Date: 01/20/2015</td>
<td>Nursing, Occupational Therapy, Physical Therapy</td>
</tr>
<tr>
<td>Problem Start Date: 10/08/2014</td>
<td>Will have no s/s of respiratory distress/failure within the next 90 days</td>
<td>Allow breaks when performing tasks - do not rush</td>
<td></td>
</tr>
<tr>
<td>Edited: 10/15/2014</td>
<td>Edited: 01/20/2015</td>
<td>Minimize stress / anxiety -- allow to verbalize feelings when appropriate</td>
<td></td>
</tr>
<tr>
<td>Edited By:</td>
<td></td>
<td>Monitor for s/s of respiratory infection, report to M.D.</td>
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<tr>
<td></td>
<td></td>
<td>Apply O2 per order; encourage to take slow deep breaths</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Monitor for signs of relief from s.o.b., provide respiratory treatments per order</td>
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<tr>
<td></td>
<td></td>
<td>Administer medications as ordered.</td>
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<td></td>
<td>Therapy referral as needed</td>
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<td></td>
<td></td>
<td>Assess respiratory status i.e.: breath sounds, respiratory rate, skin color, etc. notify MD of abn’s</td>
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<tr>
<td></td>
<td></td>
<td>Edited: 01/20/2015</td>
<td></td>
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<td></td>
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<td>Edited By:</td>
<td></td>
</tr>
</tbody>
</table>
PC – Care Plan DAM: Story Board 8

A1
Annual Exam

A2
Nutritionist Visit

B1
ER Visit
Asthma

B2
DM/CM Call

B3
PCP Follow-up

Care Plan (Clinical)

Care Plan (Specialty)

Discharge Summary
Care Plan (Clinical)

Care Plan (Disease Management)

Care Plan (Clinical)
RESULTS

Michelangelo

Van Gogh

Picasso
Summary of Deliverables

Deliverables:
- **Report (50+ pages)**
  - 19 CM/DM care plan requirements addressed
- **Context for sketches (Chapter 3.1)**
  - Visualizations of the “longitudinal view”
- **Summarized C-CDA R2.0 care plan document sections and entries**
  - (Appendix A, Table 5)
- **Novel care plan document design (Chapter 3.2)**
  - Care plan “containers” organize human readable content
  - Care plan standard “core sections” organize machine readable entries
  - Multidimensional “linkages” to aid information processing
- **9 CDA Care Plan Documents**
  - (Table 1 (over time), Table 4 (requirements met)
  - Reinforce longitudinal context
  - Demonstrate a way to address CM/DM requirements
  - Identify potential new templates, and current gaps
- **Stylesheet to illustrate processing possibilities that leverage the proposed design (Chapter 3.3)**
<table>
<thead>
<tr>
<th>Requirement Characterization</th>
<th>Priority:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
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</thead>
<tbody>
<tr>
<td>Care Plan structure – Containers</td>
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<td>Metadata – Acceptance/status</td>
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<td>Linking – internal and external</td>
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<td>Linking of Outcome Observation</td>
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<td>Linking Supplied Edu materials</td>
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<td>Types of interventions, barriers, etc.</td>
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<td>X</td>
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<tr>
<td>Goal not met</td>
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<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Priority:</td>
<td></td>
<td>A</td>
<td>B</td>
<td>B/C</td>
<td>C</td>
<td>S=Sketched</td>
<td>G=Guidance</td>
<td>X=Gap</td>
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</tr>
</tbody>
</table>

Summary of Requirements Addressed (Tables 2,4)
A Longitudinal Context for Care Plans

Figure 6: Storyboard Example—Context for CDA Sketches
4 Content Consumer options:

- Data generated in an EHR

Content Creator

Snapshots of data available to the encounter

< 1 hour
Encounter

Content Creator

Snapshots of data available after the encounter

Care Cycle

Pre-Condition
Post Condition

Patient Self-management

> 1 week, 1 month, 1 year

Data generated in a PHR

4 Content Consumer options:
Figure 1
Figure 10: Proposed Care Plan Document Structure with “Container”

The new care plan container uses a section to organize the content in each plan so that each plan can be distinguished.

Each care plan container organizes the human readable information and enables recording enrollment and participation “metadata” information specific to each plan.

Machine readable information about the plan itself, people’s involvement/acceptance of the plan, timing of the plan, and entry references to entries that are organized according the basic design for a C-CDA R2.0 care plan.

Every C-CDA R2.0 care plan organizes the machine readable entries in this standard way using these “core sections”.

Header

Proposed “Containerized” Design

Content Container
- Plan Metadata
- Concerns
- Goals
- Interventions
- Assessments
- Outcomes

Machine Readable Plan Metadata

Concerns

Goals

Interventions

Assessments

Outcomes
Care Plan Container Is a Recursive Design

Figure 10: Proposed Care Plan Document Structure with “Container”

The new care plan container uses a section to organize the content in each plan so that each plan can be distinguished.

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- Machine readable information about the plan itself, people’s involvement/acceptance of the plan, timing of the plan, and entry references to entries that are organized according the basic design for a C-CDA R2.0 care plan.

- Every C-CDA R2.0 care plan organizes the machine readable entries in this standard way using these “core sections”.

Care Plan Container

Proposed “Containerized” Design
CDA linkages enable the information to be processed in a multiple meaningful ways:
- Text reference links connect entries to the associated human readable text.
- Entry reference links connect entries together.

**Outside in,**
**Inside out,**
**Top down** – from human readable text down into machine-readable entries that are organized by fundamental “resource” type
**Bottom up** – from machine readable entries up into the corresponding human readable text that is organized by plan
**Side to side** – linking between entries within the document which reference each other.
**Jump around** – linking from entries to other documents, from entries in this document to entries in other documents, from this document to prior documents and outside reference documents.
# Plan Content Structure - Containers

<table>
<thead>
<tr>
<th>Req #</th>
<th>Short Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Patient Name and Demographics</td>
</tr>
<tr>
<td>2</td>
<td>Care Plan Author Name and Contact Information</td>
</tr>
<tr>
<td>3</td>
<td>Value Set Option to Identify Patient Status or Plan/Program Enrollment</td>
</tr>
<tr>
<td>6</td>
<td>Value Set Option to Categorize Care Plan Kind</td>
</tr>
<tr>
<td>7</td>
<td>Value Set Option to Identify Specific Care Plan Type</td>
</tr>
<tr>
<td>8</td>
<td>Care Plan Name and Description</td>
</tr>
<tr>
<td>9</td>
<td>Care Plan Expected Start and Stop Dates</td>
</tr>
<tr>
<td>12</td>
<td>Date, Time, and Care Plan Identification for Reconciliation and Management</td>
</tr>
</tbody>
</table>

Priority: [A] [B] [B/C] [C]
## Metadata – Content Acceptance/Status

<table>
<thead>
<tr>
<th>Req #</th>
<th>Short Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Value Set Option for Care Plan Acceptance by Patient/Member</td>
</tr>
<tr>
<td>5</td>
<td>Value Set Option for Care Plan Acceptance by Care Team</td>
</tr>
<tr>
<td>14</td>
<td>Value Set Option for Draft vs. Final Care Plan Content</td>
</tr>
<tr>
<td>15</td>
<td>Differentiating Between Author Proposing vs. Author Accepting Content</td>
</tr>
</tbody>
</table>

**Priority:**
- A
- B
- B/C
- C
<table>
<thead>
<tr>
<th>Req #</th>
<th>Short Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Encounter History Linked to Care Plan Elements</td>
</tr>
<tr>
<td>11</td>
<td>Encounter Notes Linked to Care Plan Elements</td>
</tr>
<tr>
<td>18</td>
<td>Assessment Performed with Link to Results</td>
</tr>
<tr>
<td>19</td>
<td>Patient Provided with Education Material</td>
</tr>
</tbody>
</table>

Priority:  

- A
- B
- B/C
- C
<table>
<thead>
<tr>
<th>Req #</th>
<th>Short Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Value Set Options for Types of Interventions, Concerns, Activities, and Barriers</td>
</tr>
<tr>
<td>17</td>
<td>Care Step (Goal or Intervention) Is Not Met</td>
</tr>
</tbody>
</table>
Key Technical Details

Sketches Folder:
(Template and Value Set Assumptions)
List_of_OIDS.xlsx
(Table 3)

Processing Possibilities Folder:
Care Plan IDs.xlsx
Leveraging the Design

Purpose: Render Care Plan

This is a minimally viable stylesheet and should not be utilized in a production environment.

Revisions: 022715 BWS Creation

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```xml
<xs:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
xmlns:cda="urn:nhinc-org:v3"
xmlns:sdtc="urn:nhinc-org:sdtc"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
exclude-result-prefixes="cda sdtc xsi">

<xs:template match="/cda:Component" wrap="true">
  ...
</xs:template>
</xs:stylesheet>
```

Section 1: Stylesheet Configuration

```xml
<!-- text-align:center; -->
</div>
</style>
</head>
<body>

<ch id="Top" name="Top">Care Plan</ch>

```xml
<xs:template name="BuildTable"/>
</xs:template>
</xs:template>
</xs:stylesheet>
```
## Sumary of Key “Gap” Findings (Chapter 4)

<table>
<thead>
<tr>
<th>#</th>
<th>Gap type</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Semantics</td>
<td>Status-related concepts need value sets</td>
</tr>
<tr>
<td>2</td>
<td>Modeling</td>
<td>“Content Status”, “Care Team Acceptance” needs to be clarified.</td>
</tr>
<tr>
<td>3</td>
<td>Semantics</td>
<td>Types of barriers and types of interventions, need value sets</td>
</tr>
<tr>
<td>4</td>
<td>Modeling</td>
<td>Care Plan “Containers” and the metadata for each care plan</td>
</tr>
<tr>
<td>5</td>
<td>Modeling</td>
<td>Documentation of a care step or goal “not met”</td>
</tr>
<tr>
<td>6</td>
<td>Modeling</td>
<td>Information for the payer section needs to be clarified</td>
</tr>
<tr>
<td>7</td>
<td>Requirements</td>
<td>Informational content in a care plan needs to be clarified</td>
</tr>
<tr>
<td>8</td>
<td>Requirements</td>
<td>The function of Care team members needs to be clarified</td>
</tr>
<tr>
<td>9</td>
<td>Requirements</td>
<td>ServiceEvent coding to help search for care plans, track activites</td>
</tr>
<tr>
<td>10</td>
<td>Guidance</td>
<td>Internal and external “linking” within and across documents</td>
</tr>
</tbody>
</table>
1. **Form a technical implementation team to address usage issues for C-CDA R2 Templates**
   - Payor/Provider pilots
   - PCWG IG issues

2. **Establish coded concepts and value sets to clarify expected care plan content and support machine readable entries**
   - Key CM/DM & pilot value sets
   - PCWG for other value sets
   - Use care plan examples to establish needed value sets

3. **Record progress as it happens by developing a detailed implementation guide for creating and processing care plan documents**
   - 2014 pilots as input
   - Submission of pilot and PCWG DSTU comments
   - IG work by PCWG, StrucDocsWG & Attachments WG
   - Include more implementer guidance (volume 1 content)

4. **Explore and develop content representation that makes sense in clinical use**
   - 2014 pilots as input
   - PCWG & StrucDocs WG domain
   - Focus on content that makes sense in clinical use before addressing machine readable entries
   - Address how the content will be presented in meaningful, useful ways
Three key take away points:
1. This is much more complex than anticipated. Some fundamental concepts are not yet agreed, like goals and targets. A shared vision has not yet emerged making implementation difficult.
2. More examples, prototyping, and piloting are needed to understand the requirements of field implementations.
3. A significant effort will be needed to examine implementation details and develop consensus at a finer level of detail. Changes will be needed, and additional template refinement or development will be needed to mature this work.

Thom Kuhn: Yes! This is true. There is a real danger of getting ahead of ourselves.

Lenel James: I agree that we need to find what provider and payer care Plan software can do, from those willing to work on a pilot process.
Next Steps

1. Schedule Q&A with interested stakeholders
2. Meet with key project participants to assess available resources
3. Determine Plan, Provider, and Vendor candidates for one or more pilot projects
4. Review options and timetable for pilot(s)
5. Kick-off pilots
6. Assess pilot progress and lessons learned
7. Determine impact on proposed Care Plan template changes
8. Prepare and submit formal C-CDA R2.X DSTU comments