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CONSULTING GROUP

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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Commisioned by
Blue Cross Blue Shield Association

BlueCross BlueShield Association

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Agenda

HL7 Volunteers Presentation (90 mins)

- Welcome and Introductions (10)
- About the project (8 mins)
  - Historial 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

SEPTEMBER 2013 HL7 BALLOT COMMENT

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

Submitted by:
R. Lenel James
Blue Cross and Blue Shield Association

312-404-5852

Contributors:

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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

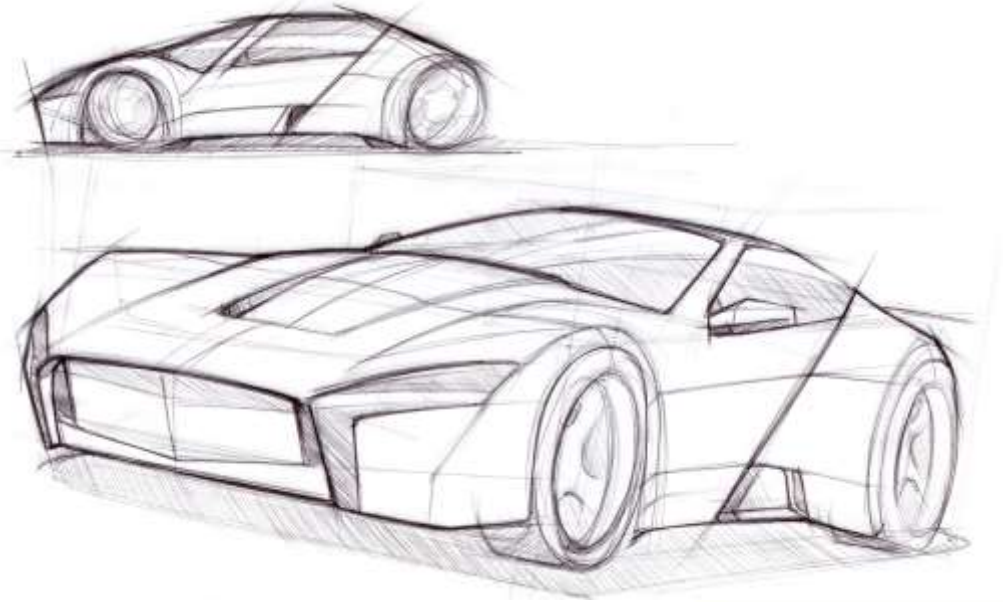
Objectives:

- 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

Approach

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

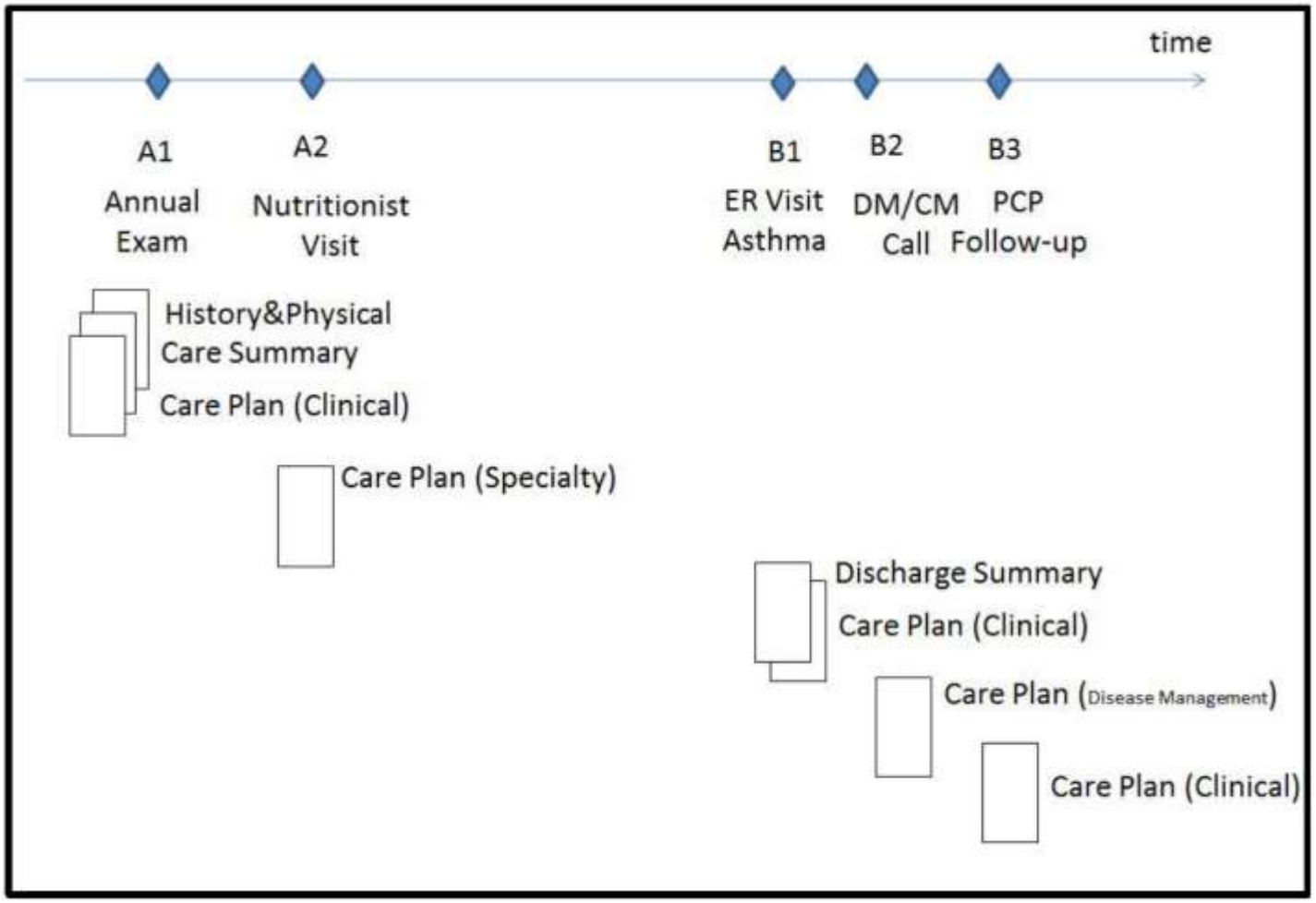
[redacted]

Care Plan - [redacted] (Full Code) MR # [redacted]

Last Care Conference: 01/21/2015
Next Care Conference: 04/23/2015

Problem	Goal	Approach	Discipline
Problem Start Date: 10/08/2014 [redacted] has COPD and is at risk for respiratory distress / failure: Edited: 10/16/2014 Edited By: [redacted]	Long Term Goal Target Date: 04/20/2015 Will have no s/sx of respiratory distress/failure within the next 90 days Edited: 01/20/2015 Edited By: [redacted]	Approach Start Date: 01/20/2015 Allow breaks when performing tasks - do not rush Minimize stress / anxiety -- allow to verbalize feelings when appropriate Monitor for s/s of respiratory infection, report to M.D. Apply O2 per order,encourage to take slow deep breaths Monitor for signs of relief from s.o.b., provide respiratory treatments per order Administer medications as ordered. Therapy referral as needed Assess respiratory status ie: breath sounds, respiratory rate, skin color, etc. notify MD of abn's Edited: 01/20/2015 Edited By: [redacted]	Nursing, Occupational Therapy, Physical Therapy

PC – Care Plan DAM: Story Board 8



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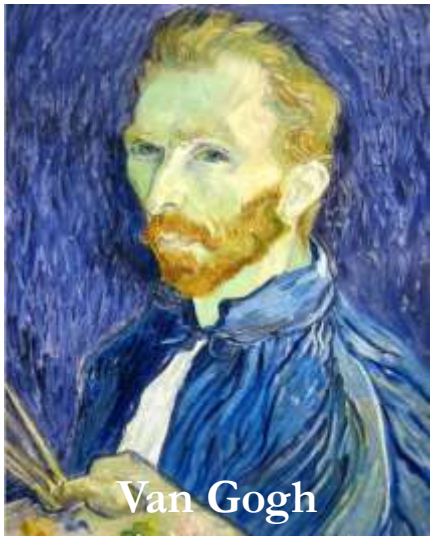
RESULTS



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)**

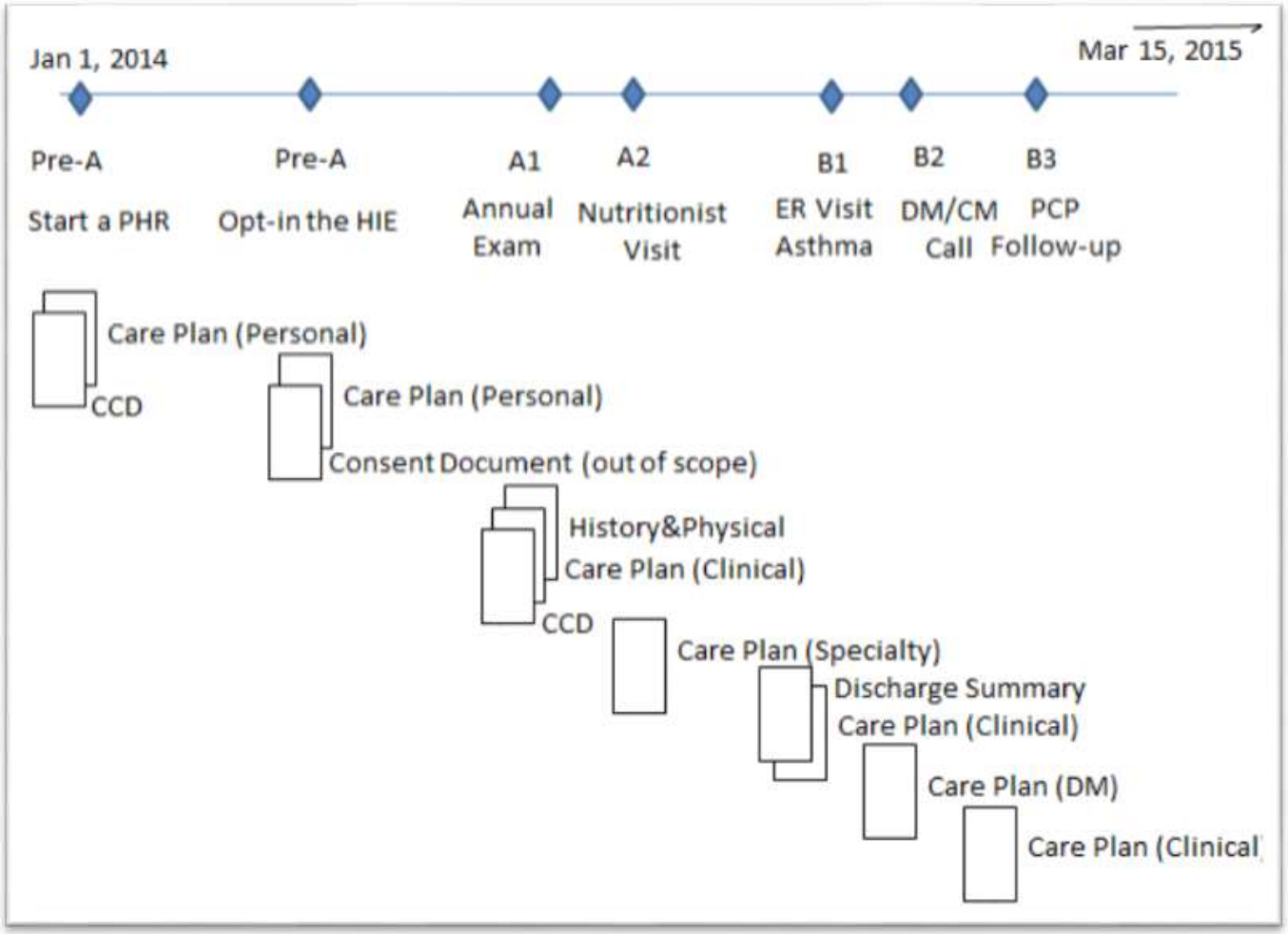
Summary of Requirements Addressed (Tables 2,4)

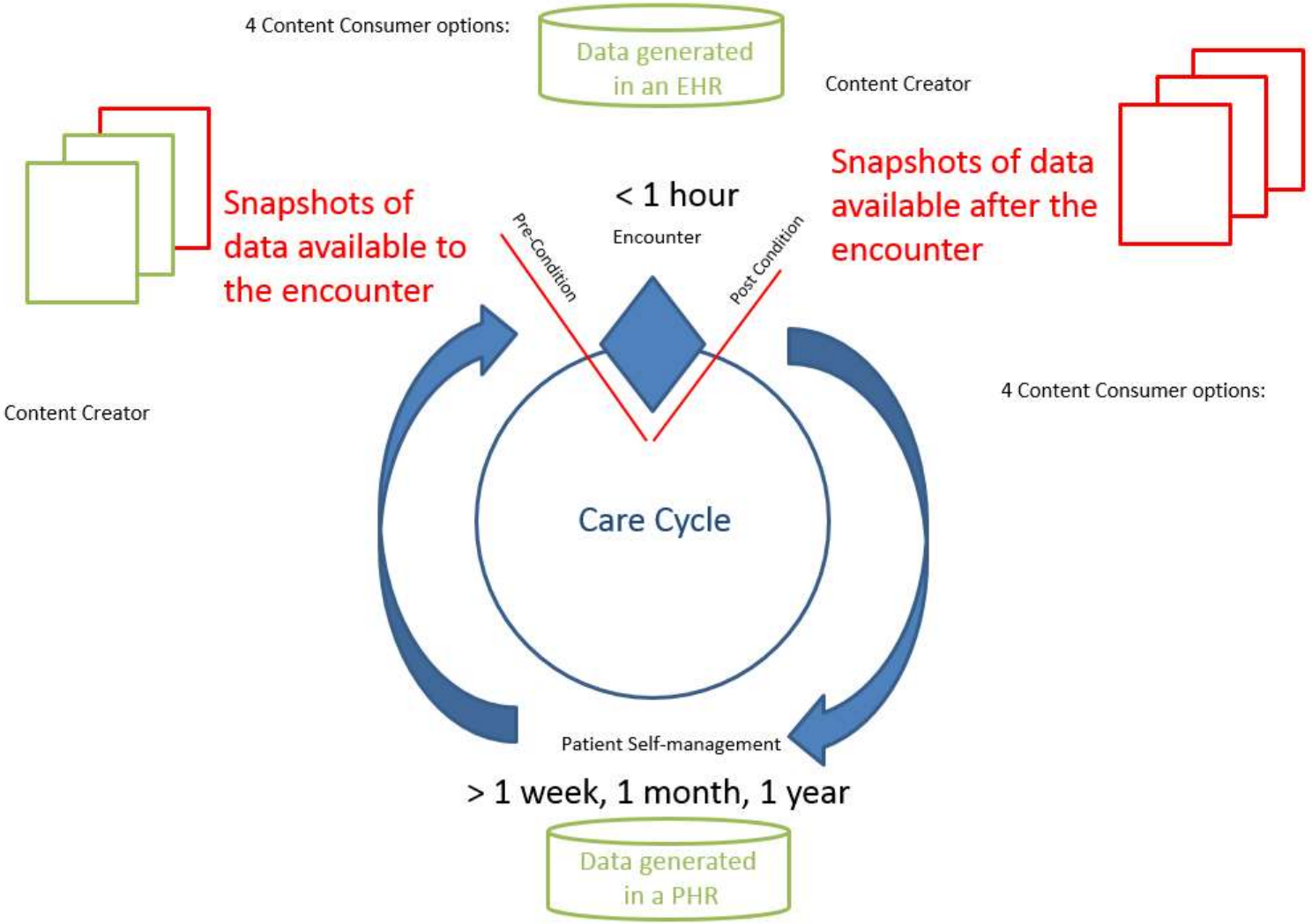
Priority: A B B/C C S=Sketched G=Guidance X=Gap

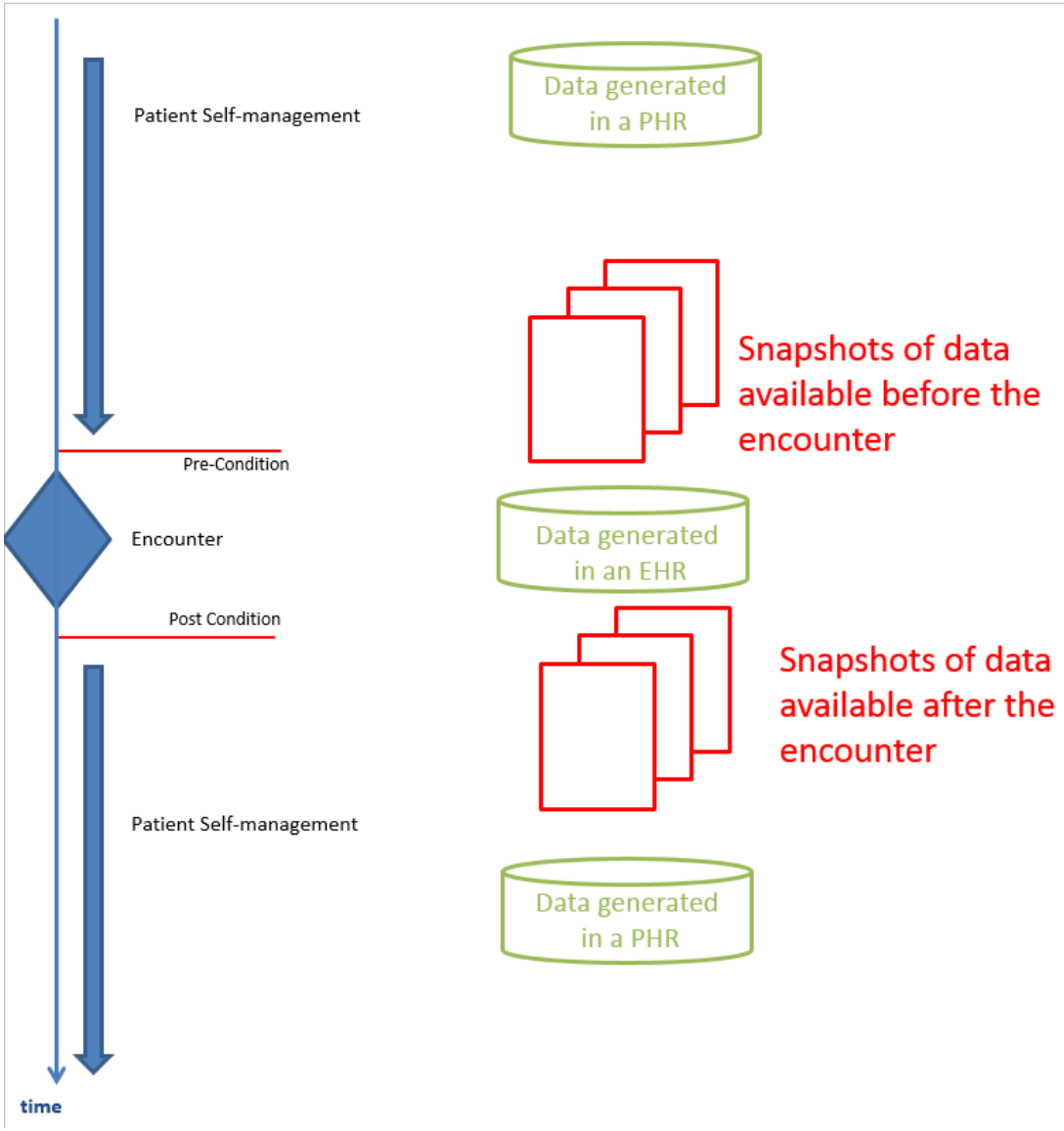
	Requirement Characterization	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Structure	Care Plan structure – Containers	S	S	S			S	S	S	S	S		S							
Acceptance	Metadata – Acceptance/status				S	S									S	S				
Linking	Linking – internal and external										S	S					S			
Linking	Linking of Outcome Observaction																		G	
Linking	Linking Supplied Edu materials																			G
Uncharted	Types of interventions, barriers, etc.													X						
Uncharted	Goal not met																	X		

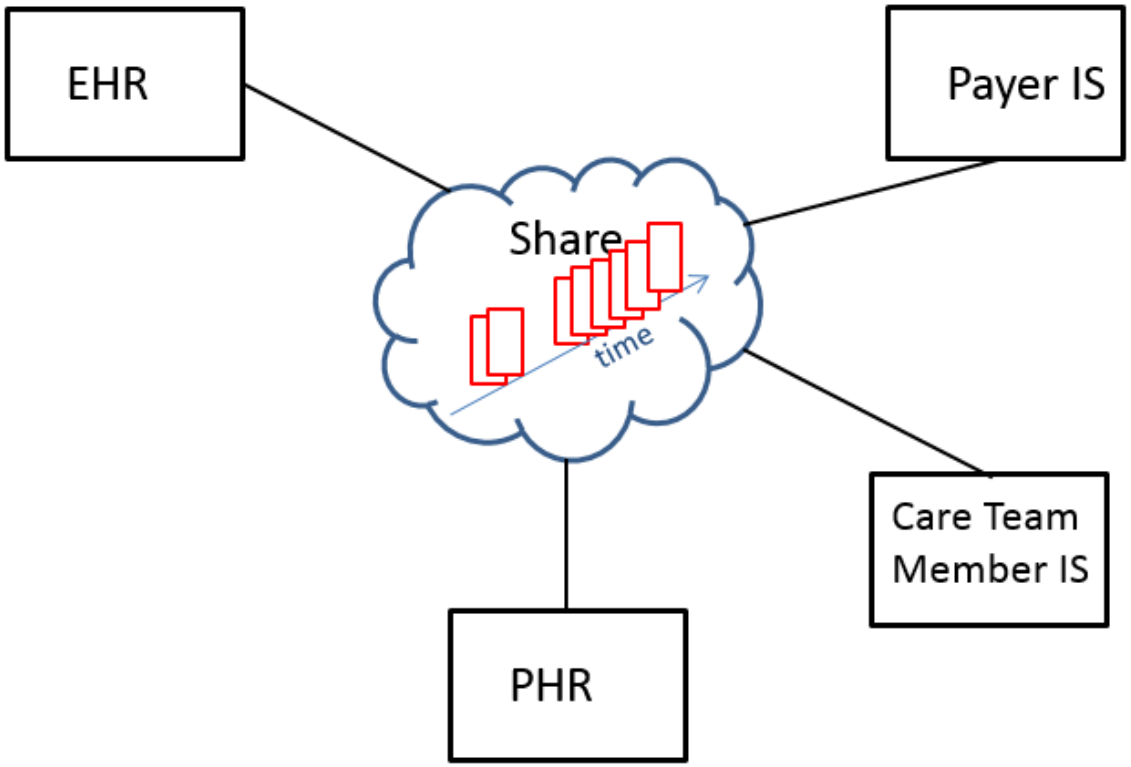
A Longitudinal Context for Care Plans

Figure 6: Storyboard Example—Context for CDA Sketches




4 Content Consumer options:
Data generated in an EHR
Content Creator
Snapshots of data available after the encounter
Snapshots of data available to the encounter
< 1 hour
Encounter
Pre-Condition
Post Condition
Content Creator
4 Content Consumer options:
Care Cycle
Patient Self-management
> 1 week, 1 month, 1 year
Data generated in a PHR


Patient Self-management
Pre-Condition
Encounter
Post Condition
Patient Self-management
time
Data generated in a PHR
Snapshots of data available before the encounter
Data generated in an EHR
Snapshots of data available after the encounter
Data generated in a PHR


EHR
Payer IS
Share
time
Care Team Member IS
PHR

Document Design Details

Care Plan Document

An illustration of the CDA document developed in C-CDA R2.0 for representing a care plan.

The design for a C-CDA R2.0 care plan document includes a header and in the body of the document it includes one section for each of the following types of information:

- the concerns
- the goals,
- the interventions, and
- the assessments and outcomes.

These set of "core sections" make up the structure of a care plan.

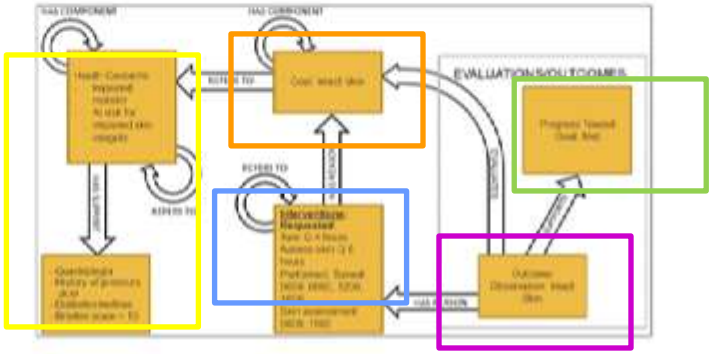
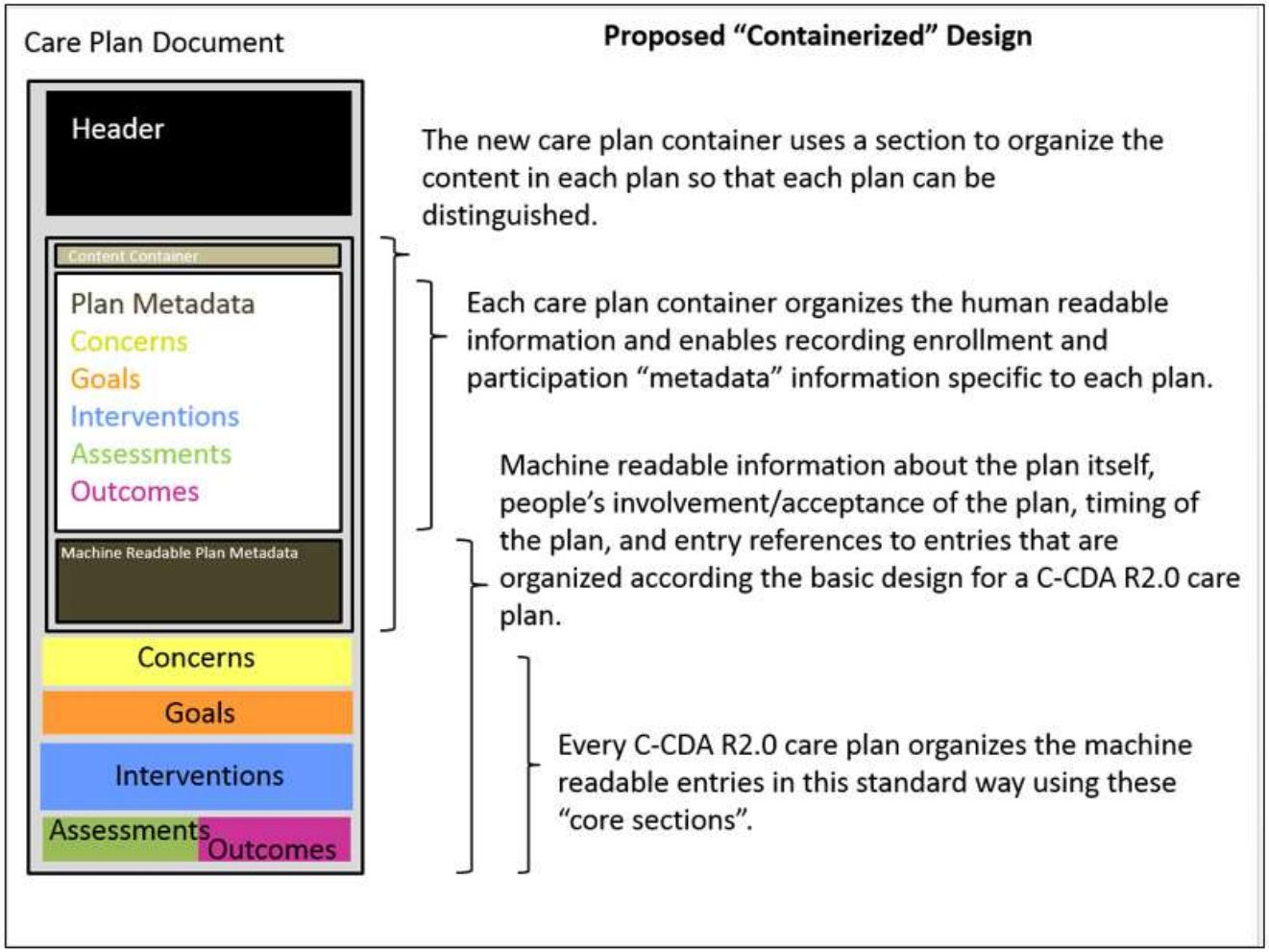


Figure 1

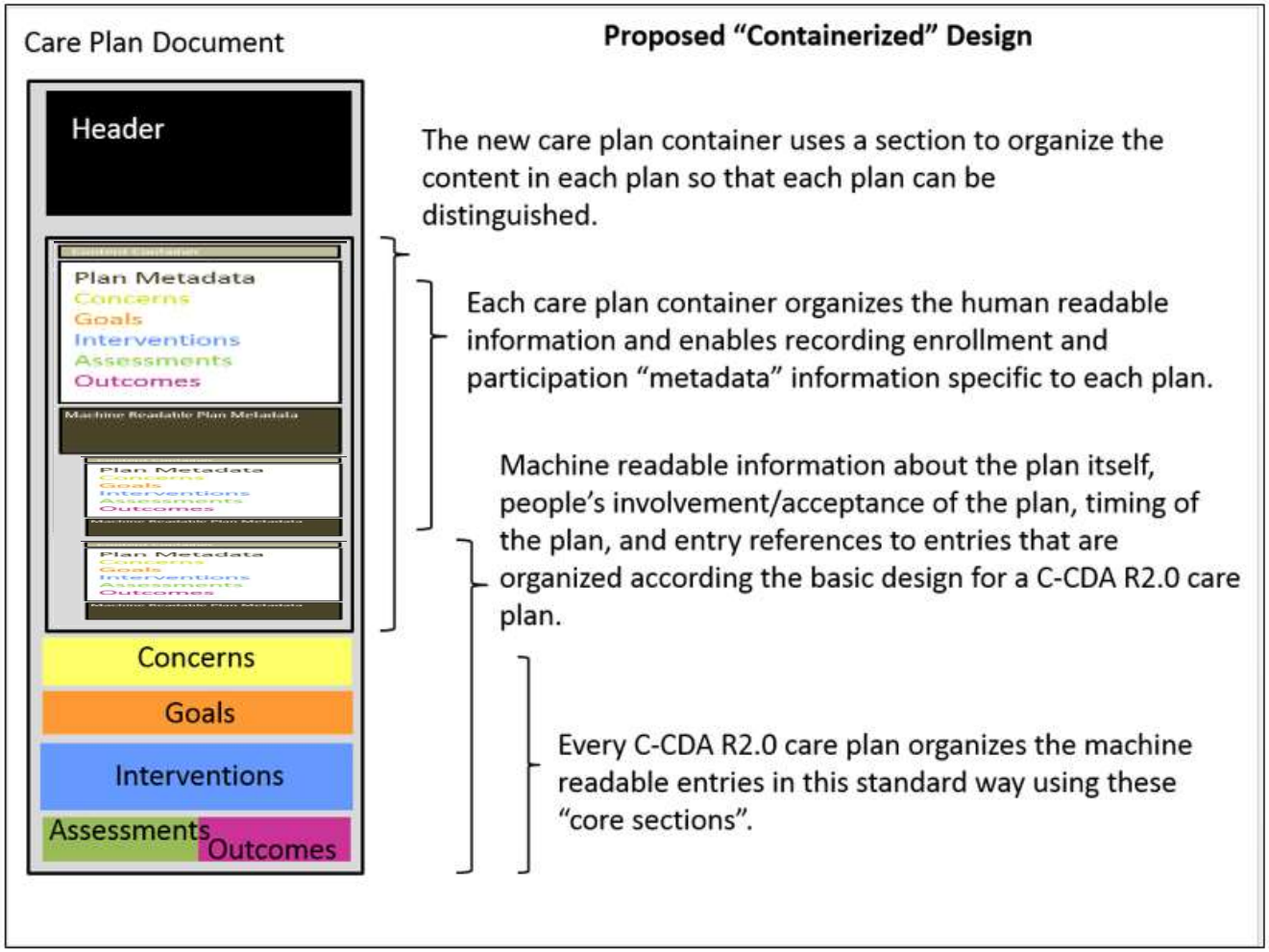
Document Design Details

Figure 10: Proposed Care Plan Document Structure with "Container"



Document Design Details

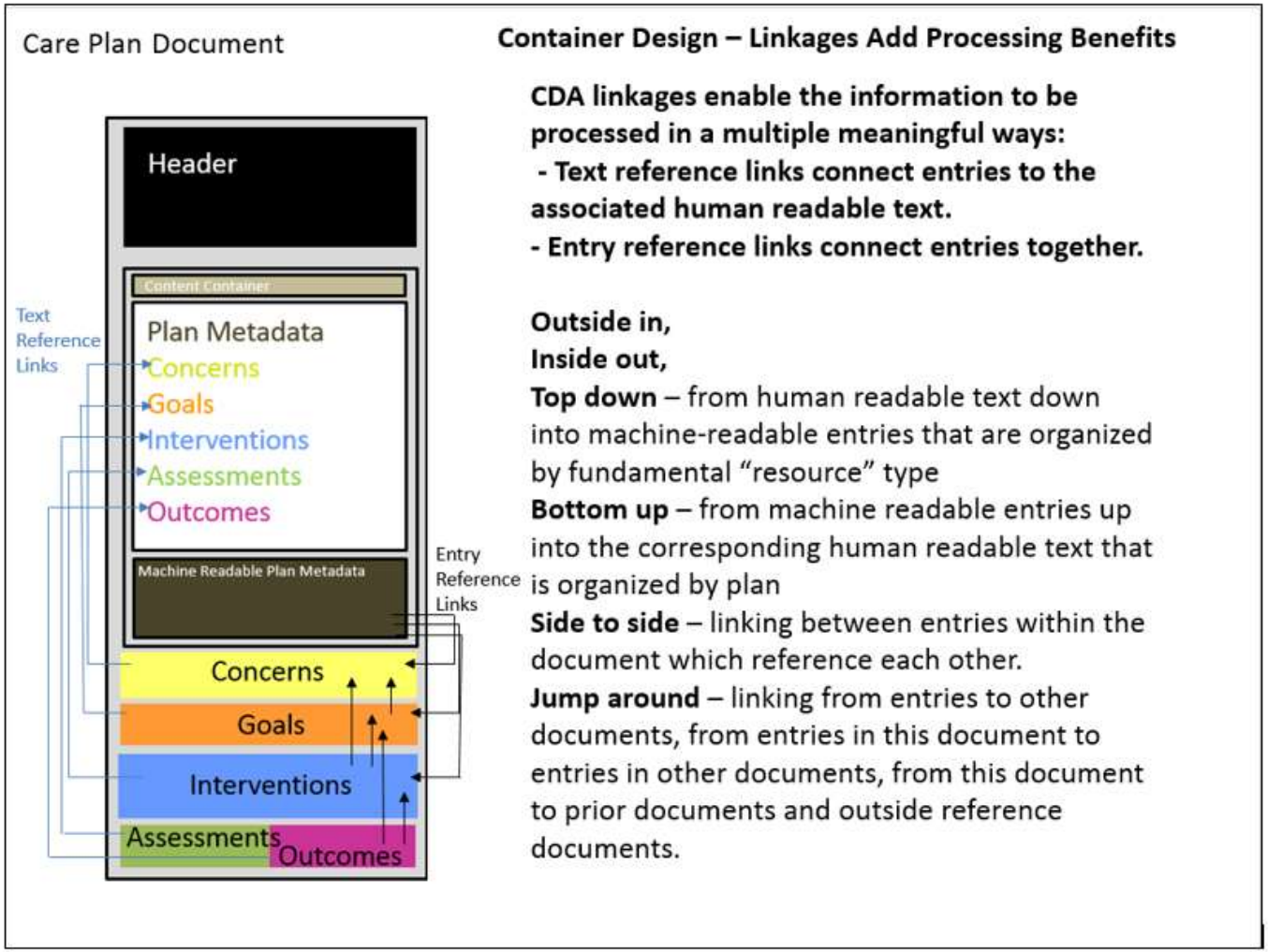
Figure 10: Proposed Care Plan Document Structure with "Container"



Care Plan Container Is a Recursive Design

Document Design Details

Figure 13: CDA Linkages Add Processing Benefits



CDA XML Walk Through

able of Contents

- PAYMENT INFORMATION
- Clinical Care Plan
  - Care Plan (Disorder) Diabetes
- Health Concerns Section
- Goals Section
- Interventions Section
- Health Status and Outcome Evaluation Section

AYMENT INFORMATION

AYER INFORMATION GOES HERE...

linical Care Plan

Section Author(s):

Enrollment	Data
Care Plan Program Name	Good Health Patient Wellness Program
Patient Enrollment Start Date:	20140101
Patient Enrollment Status	Enrolled (ENROLLED) (e.g. Use your Enrollment status codes here Proposed, Enrolled, Rejected, Cancelled)
Status Updated on:	20140815

ote: This care plan content does not fit with the Story Board 8 Scenario. The Care Plan content was provided on January 25, 015 to supply a sample showing care plan entry content.

Problem	Goal	Approach
• Problem Start Date: 10/08/2014 • Risk Concern: Dehydration • Edited: 11/12/2014 • Edited by: Patricia Primary	• Long Term Goal Target Date: 4/20/2015 • Goal: adequately hydrated with no s/s of dehydration over the next 90 days • Edited: 1/20/2015 • Patricia Primary	• Approach Start Date: 01/20/2015 • Fluid intake as ordered. offer fluids the resident likes -- assist as needed. • Monitor skin turgor and for leg cramps -- report abn.s to M.D. • Monitor for increased temp./ B/P and constipation - report to M.D. as needed. • Monitor weight monthly and prn. • Labs per MD ordered. • Meds as ordered. • Edited: 1/20/2015 • Patricia Primary

```
<code code="EX-PersonalCarePlan" displayName="Personal Care Plan" codeSyst
    sdtc:valueSet="1.2.826.0.1.3680043.8.2160.1.1.1.1.5.1"/>
<title>Clinical Care Plan</title>
<text>

    <!-- Header Info for the Care Plan -->
    <table styleCode="EnrollmentInfo">
        <thead>
            <tr>
                <th>Enrollment</th>
                <th>Data</th>
            </tr>
        </thead>
        <tbody ID="CP1_Enrollment">
            <tr ID="CP1_Enrollment_Name">
                <td>Care Plan Program Name</td>
                <td ID="CP1_Enrollment_CPType_Value">Good Health Patient W
            </tr>
            <tr ID="CP1_Enrollment_StartDate">
                <td>Patient Enrollment Start Date:</td>
                <td>20140101</td>
            </tr>
            <tr ID="CP1_Enrollment_Status">
                <td>Patient Enrollment Status</td>
                <td ID="CP1_Enrollment_Status_Value">Enrolled (ENROLLED) (
            </tr>
            <tr ID="CP1_Enrollment_StatusEffectiveDate">
                <td>Status Updated on:</td>
                <td>20140815</td>
            </tr>
        </tbody>
    </table>
    <br/>
```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Plan Content Structure - Containers

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

Priority: A B B/C C

Metadata – Content Acceptance/Status

Req #	Short Description
4	Value Set Option for Care Plan Acceptance by Patient/Member
5	Value Set Option for Care Plan Acceptance by Care Team
14	Value Set Option for Draft vs. Final Care Plan Content
15	Differentiating Between Author Proposing vs. Author Accepting Content

Priority: A B B/C C

Linking/Referencing

Req #	Short Description
10	Encounter History Linked to Care Plan Elements
11	Encounter Notes Linked to Care Plan Elements
18	Assessment Performed with Link to Results
19	Patient Provided with Education Material

Priority: A B B/C C

“Uncharted Areas”

Req #	Short Description
13	Value Set Options for Types of Interventions, Concerns, Activities, and Barriers
17	Care Step (Goal or Intervention) Is Not Met

Priority: A B B/C C

Key Technical Details

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

Document Level

Name	OID	Description
Intentionally blank	1.2.826.0.1.3680043.8.2160.1.1.1.1.1	no new document-level templates

Section Level

Name	OID	Description
Care Plan Divider Section	1.2.826.0.1.3680043.8.2160.1.1.1.1.2.1	A care plan divider section

Entry Level

Name	OID	Description
Care Plan Enrollment Observation	1.2.826.0.1.3680043.8.2160.1.1.1.1.3.1	Specifies both the care plan program and the enrollment status through an entry relationship
Care Plan Enrollment Status	1.2.826.0.1.3680043.8.2160.1.1.1.1.3.7	Documents a patient's status in a care plan
Care Plan Description	1.2.826.0.1.3680043.8.2160.1.1.1.1.3.8	Documents a description of the care plan
Care Plan Content Status	1.2.826.0.1.3680043.8.2160.1.1.1.1.3.9	Documents the status of the content of the care plan
Care Plan Acceptance Organizer	1.2.826.0.1.3680043.8.2160.1.1.1.1.3.2	Organizes a set of Care Team Member Acceptance Observations
Care Team Member Acceptance Observation	1.2.826.0.1.3680043.8.2160.1.1.1.1.3.3	A clinical statement pattern that identifies a care team member involved in verifying, performing, or supporting a care plan and their acceptance status for the care plan, its goals, and its interventions.
Overall Care Plan Acceptance Status	1.2.826.0.1.3680043.8.2160.1.1.1.1.3.4	Documents a Care Team Member's acceptance status for the care plan represented in the associated care plan.
Care Plan Goal Acceptance Status	1.2.826.0.1.3680043.8.2160.1.1.1.1.3.5	Documents a Care Team Member's acceptance status for the care plan goals represented in the associated care plan.
Care Plan Intervention Acceptance Status	1.2.826.0.1.3680043.8.2160.1.1.1.1.3.6	Documents a Care Team Member's acceptance status for the care plan planned interventions represented in the associated care plan.

Vocabulary Sets

Concept Domain Name	OID	Description
CD Care Plan Kind	1.2.826.0.1.3680043.8.2160.1.1.1.1.5.6	A value set mechanism that represents different kinds of care plans (e.g. personal, clinical, disease management, case management) Kinds are distinguished by the unique point of view/purpose they represent.
CD Care Plan Type	1.2.826.0.1.3680043.8.2160.1.1.1.1.5.1	A value set mechanism that represents different types of care plans (e.g. types of disorder specific, provider-type specific, specialty specific) This value set can be a grouper value set that allows these sets of types to be defined

Processing Possibilities Folder:
Care Plan IDs.xlsx

ID	Label	Description	
DCDB2691-6D23-4384-971B-35F48C4B6A03		Care Plan Document	
C1CC82ED-8D2F-476F-B240-D945D3A1CE33	Payer	Payer Section	
9BD5BC25-7429-44DD-AA84-7514CF67536B	CP1	Overall Care Plan Section	
95299940-3A6C-48E8-931A-3B9C92689F04	CP1_Enrollment	Care Plan 1 Enrollment information	
80F6392C-281D-4302-976C-6BCDBA8A3A03	CP1_Concern_01		
F9E39E98-43E9-4EAD-93D3-77EA9EF9C23C	CP1_Goal_01_G1		
80F6392C-281D-4302-976C-6BCDBA8A3A06	CP1_Intervention_01		
54EE961C-176D-42B4-B455-9FF944160290	CP1_Concern_02		
E033C296-0411-409D-B852-BE4D301253A2	CP1_Goal_02_G1		
D7E860C7-5075-4A9F-AD6C-504C446A9BCF	CP1_Intervention_02		
80F6392C-281D-4302-976C-6BCDBA8A3A02	HC_Concern_01	Orphaned Concern not in a plan	
B026C20E-2928-491C-817C-216C734496F8	CP2	Disorder Specific Care Plan	
A1B0F949-4B95-4792-A6EC-517A1043EEB9	CP2_Enrollment	Machine readable CP Container #2	
7EEF1161-33E3-4D6D-99D7-3321924927E2	CP2_Concern_01		
979C5777-2018-488C-B39F-EAFFC15A176F	CP2_Goal_01		
2695200F-A3E4-4A34-AD9E-3FD5EABA7AB8	CP2_Intervention_01		
F09C0DAB-DA1B-4223-A0CA-5F130C6688DC	CP2_Concern_02		
0587111B-081E-4BF9-8204-8CBD4083429A	CP2_Goal_02		
5257FF6C-9AF7-43A4-AE76-407A3D794CEA	CP2_Intervention_02		
9C62C3E8-D2D1-4953-8588-60D9769CB9B3	Concerns	Concerns Section	
2D135B9D-13AA-4E3A-ADDA-74749E1EF65E	Goals	Goals Section	
603CCF38-4331-43AF-9EAF-E8EAF69D21C2	Interventions	Interventions Section	
1A013B11-EEEE-420B-A400-63629EF5BBF8	Assess-Eval	Assessment/Evaluations Section	
9A902958-8B1F-4652-8B7B-4184E9F60BE0	Patient	Patient	1
ED93D9A5-3152-4D58-86F8-F44A4476286B	DocumentAuthor	Document Author	2
A9D4066C-FF9F-45AC-9682-1BE7BB0650E5	Custodian	Document Custodian	3
DF4CBF01-FBF4-4941-9B3C-11956A1C00A3	PCMH	Patient's Provider Organization (PCMH	1A
CC077F00-65B6-4B29-BEAB-69DB3B1F919F	DataEnterer	Document Data Enterer	4
F4E6CAF7-BE46-4AAD-9FC0-0FE5230E4EC2	InformationRecipient	Information Recipient	5
23E258A0-4682-45AA-9F2D-019AA5B47776	LegalAuthenticator	Legal Authenticator	6
n/a at this time	Authenticator1	Authenticator	7
n/a at this time	Informant1	Informant	8
n/a at this time	Participant1	Participant	9
n/a at this time	RelatedDocument1	Parent Document	1
n/a at this time	Encounter	Encompassing Encounter	2
n/a at this time	ServiceEvent1	Service Event	3
n/a at this time	Order1	Order	4

Leveraging the Design

Care Plan

Table of Contents

Care Plan Containers

- Clinical Care Plan
  - Care Plan (Disorder) Diabetes

Standard Aggregate Care Plans Sections

- Aggregation of Health Concerns
- Aggregation of Goals
- Aggregation of Interventions
- Aggregation of Health Status Assessments and Outcome Evaluations

Clinical Care Plan

Author: Primary, Patricia MD
November 24, 2014

Enrollment	Data
Care Plan Program Name	Good Health Patient Wellness Program
Patient Enrollment Start Date:	20140101
Patient Enrollment Status	Enrolled (ENROLLED) (e.g. Use your Enrollment status codes here Proposed, Enrolled, Rejected, Cancelled)
Status Updated on:	20140815

Problem	Goal	Approach	Assessment/Evaluation
• Problem Start Date: 10/08/2014 • Risk Concern: Dehydration • Edited: 11/12/2014 • Edited by: Patricia Primary	• Long Term Goal Target Date: 4/20/2015 • Goal: adequately hydrated with no s/s of dehydration over the next 90 days • Edited: 1/20/2015 • Patricia Primary	• Approach Start Date: 01/20/2015 • Fluid intake as ordered, offer fluids the resident likes -- assist as needed. • Monitor skin turgor and for leg cramps -- report abs.s to M.D. • Monitor for increased temp / B/P and	

```
    ================================================================================
    Purpose:    Render Care Plan

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

    Revisions:  022715 BWS Creation

                Copyright 2015 Healthwise, Incorporated
    ================================================================================
    -->
    <xsl:stylesheet version="1.0"
                    xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
                    xmlns:cda="urn:hl7-org:v3"
                    xmlns:sdtc="urn:hl7-org:sdtc"
                    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
                    exclude-result-prefixes="cda sdtc xsi">


        <!--
    ================================================================================
     Section 1: Stylesheet Configuration
    ================================================================================
    -->
            text-align:center;
        }
        </xsl:comment>
        </style>
    </head>
    <body>
        <h1 id="Top" name="Top">Care Plan</h1>
        <xsl:call-template name="BuildTOC"/>
        <!-- Care Plan Container -->
        <xsl:apply-templates select="cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component
                                     /cda:section[cda:code[@code != '75310-3' and @code != '61146-7' and #

        <!-- Health Concerns -->
        <xsl:apply-templates select="cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component
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        <!-- Goals Section -->
        <xsl:apply-templates select="cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component
                                     /cda:section[cda:code[@code = '61146-7']]"/>
        <!-- Intervention Section -->
        <xsl:apply-templates select="cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component
                                     /cda:section[cda:code[@code = '62387-6']]"/>
        <!-- Health Status Assessments and Outcome Evaluation Section -->
        <xsl:apply-templates select="cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component
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        <p id="Spacer"/>
    </body>
</html>
</xsl:template>
```

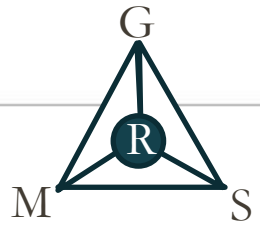

Sumary of Key "Gap" Findings (Chapter 4)

→ R=Requirements → M=Modeling → S=Semantics (value set) → G=Guidance →

#	Gap type	Brief Description
1	Semantics	Status-related concepts need value sets
2	Modeling	"Content Status", "Care Team Acceptance" needs to be clarified.
3	Semantics	Types of barriers and types of interventions, need value sets
4	Modeling	Care Plan "Containers" and the metadata for each care plan
5	Modeling	Documentation of a care step or goal "not met"
6	Modeling	Information for the payer section needs to be clarified
7	Requirements	Informational content in a care plan needs to be clarified
8	Requirements	The function of Care team members needs to be clarified
9	Requirements	ServiceEvent coding to help search for care plans, track activites
10	Guidance	Internal and external "linking" within and across documents

Recommendations (Chapter 5)

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

Conclusions (Chapter 6)

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

QUESTIONS