Attachment 2

CCD Standards for Behavioral Health

For use by the Behavioral Health Community in Michigan

Technical Implementation Guide:
HL7 CDA Release 2, Continuity of Care Document (CCD)

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TABLE OF CONTENTS

1 Overview .....................................................................................................................................................................................................3
  1.1 Purpose.............................................................................................................................................................................................3
  1.2 Scope.................................................................................................................................................................................................3
  1.3 Levels of Constraint.....................................................................................................................................................................3

2 Header Section ........................................................................................................................................................................................ 5
  2.1 US Realm Header......................................................................................................................................................................... 5
  2.2 Organization Details................................................................................................................................................................... 6
  2.3 Consumer Identification ............................................................................................................................................................ 6
  2.4 Consumer Details and Demographics .................................................................................................................................. 7
  2.5 Episode and Care Team ............................................................................................................................................................ 8

3 Required Sections .................................................................................................................................................................................. 10
  3.1 Allergies Section.......................................................................................................................................................................... 10
  3.2 Problem List Section ................................................................................................................................................................. 10
  3.3 Medications Section.................................................................................................................................................................... 11
  3.4 Procedures Section ..................................................................................................................................................................... 12
  3.5 Results Section ............................................................................................................................................................................. 13

4 Recommended Sections ....................................................................................................................................................................... 14
  4.1 Vital Signs ..................................................................................................................................................................................... 14
  4.2 Advance Directives..................................................................................................................................................................... 14
  4.3 Functional Status ........................................................................................................................................................................ 16
  4.4 Social History ............................................................................................................................................................................... 16
  4.5 Plan of Care .................................................................................................................................................................................. 19
  4.6 Encounters Section .................................................................................................................................................................... 21

5 Optional Sections ................................................................................................................................................................................. 22
1 Overview

1.1 Purpose

The purpose of the technical implementation guide is to provide a sufficient description of the required and/or desired xml structure within CCD documents to facilitate sharing among various entities in the healthcare community (Community Mental Health, primary care, etc.).

The primary audience for CCDs will be humans who read them for content. Establishing common ground of what is required, what is optional, and (broadly) how data should be presented will make CCDs from the behavioral health (BH) community easier for humans to understand.

The other audience will be computing systems that look to extract useful facts from CCDs. Sections that can include machine-readable structure will reduce the need for dual data-entry, and enable future clinical decision support rules such as drug-drug or drug-allergy interactions.

This guide is intended for technical implementers of CCDs including Electronic Medical Record (EMR) vendors and other Information Technology (IT) or Information Systems (IS) staff. The guide assumes basic familiarity with xml, HL7, and C-CDA concepts.

1.2 Scope

The implementation guide for behavioral health CCDs (BH CCD IG) must rely on earlier established implementation guides, but may offer recommendations specific to behavioral health that supersede earlier guides.

The primary reference is CDA R2 V1.1: "HL7 Implementation Guide for CDA Release 2: IHE Health Story Consolidation, DSTU Release 1.1", July 2012. This reference is available at http://bit.ly/170Dcq (login with HL7 account), or from the authors of this implementation guide. CDA R2 V1.1 is also known as Consolidated CDA, C-CDA, or CCDA. In this document, it will be referred to as the C-CDA IG.


The BH CCD IG provides a structure for organizing data elements in xml, guidance for how BH-specific content can be integrated into sections designed for physical health, and xml examples. In addition, a separate example stylesheet was developed in conjunction with this BH CCD IG and may be used to render the content of a CCD generated in conformance with this guide.

Unless otherwise specified in this document, all sections, entries, etc. must be compliant with the corresponding section, entry, etc. within the C-CDA IG. To that end, this BH CCD IG is intended as a supplement and additional constraint on the C-CDA IG.

1.3 Levels of Constraint

Organizations vary in IT capability. In healthcare especially, universal compliance to a single version of a standard is unlikely. Clinical Document Architecture (CDA) describes conformance to the standard in terms of three levels of incremental detail.
Level 1 documents follow requirements for the xml header only. The body of a Level 1 document may be xml (which must then conform to CDA) or alternate allowed formats (such as raw text or PDF).

Level 2 documents (structured narrative) follow requirements at the section level. Sections are elements within the xml body, and may be required or optional, but in either case must include the appropriate section code and relevant, human-readable clinical data.

Level 3 documents (coded data) follow requirements at the entry level. Entries are machine-readable elements within sections. Not all sections require entries (e.g., Plan of Care), but a document specification that includes any sections that require entries is considered Level 3.

If an organization wishes to comply with Stage 1 Meaningful Use of CCD, then Level 3 is required because entries are required in the following sections: Allergies, Problem List, Medications, and Results. This allows receiving systems to automatically import data from the CCD.

Level 2 imposes a common structure that can be shared by physical and behavioral health. Sending/receiving systems can validate the overall structure but not the embedded content. Level 2 documents can meet validation against the earlier HITSP C32 standard.

Level 1 is not an intended target for BH CCD. Providers can place the clinical content normally associated with a CCD into a PDF document and wrap it in a CDA-compliant xml header. Recipients who accept such CDA documents can then extract the PDF document for display. No validation of structure or content of the embedded document is possible at this level. Organizations can choose to exchange any kind of clinical data in this manner, but the remainder of this guide focuses on CCD exchange at level 2 or level 3.

The BH CCD IG will list necessary template IDs for use within required/optional sections. Organizations are encouraged to implement at least level 2 (sections) if possible, then achieve level 3 conformance (entries) on a section-by-section basis.
2 Header Section

All CDA documents must include a header that conforms to C-CDA IG chapter 2. In addition, the BH CCD IG includes additional criteria targeting CCDs specifically and backward compatibility to the older CCD standard HITSP C32 2.5. Specific guidelines for behavioral health will be listed wherever necessary.

2.1 US Realm Header

Every BH CCD must include the following at the top of the document.

```xml
<ClinicalDocument xmlns="urn:hl7-org:v3" xmlns:sdtc="urn:hl7-org:sdtc"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:hl7-org:v3 url-for-validator/CDA.xsd">
  <realmCode code="US"/>
  <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
  <templateId root="2.16.840.1.113883.3.27.1776"
              assigningAuthorityName="CDA/R2"/>
  <templateId root="2.16.840.1.113883.10.20.3"
              assigningAuthorityName="HL7/CDT Header"/>
  <templateId root="1.3.6.1.4.1.19376.1.5.3.1.1.1"
              assigningAuthorityName="IHE/PCC"/>
  <templateId root="2.16.840.1.113883.3.88.11.32.1"
              assigningAuthorityName="HITSP/C32"/>
  <templateId root="2.16.840.1.113883.10.20.22.1.1"/>
  <templateId root="2.16.840.1.113883.10.20.22.1.2"/>
  <code codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
        code="34133-9" displayName="Summarization of Episode Note"/>
  <languageCode code="en-US"/>
</ClinicalDocument>
```

The boilerplate above follows the rules from sections 2.2 (US Realm Header), 3.1.1 (Header Constraints Specific to CCD), 3.1.1.1 (ClinicalDocument/templateId), and 3.1.1.2 (ClinicalDocument/code) from the CDA R2 1.1 implementation guide. The header SHALL conform to the C-CDA IG as referenced above and, in addition:

1. **SHALL** contain exactly one [1..1] `templateId` where
   @root="2.16.840.1.113883.3.27.1776" and
   @assigningAuthorityName="CDA/R2"

2. **SHALL** contain exactly one [1..1] `templateId` where
   @root="2.16.840.1.113883.10.20.3" and
   @assigningAuthorityName="HL7/CDT Header"

3. **SHALL** contain exactly one [1..1] `templateId` where
   @root="1.3.6.1.4.1.19376.1.5.3.1.1.1" and
   @assigningAuthorityName="IHE/PCC"

4. **SHALL** contain exactly one [1..1] `templateId` where
   @root="2.16.840.1.113883.3.88.11.32.1" and
   @assigningAuthorityName="HITSP/C32"
2.2 Organization Details

Some header information depends on organizational characteristics or decisions independent of the consumer. Object IDs (OIDs) must be available for any organization that will be listed as either author or custodian for a CCD. This information follows the rules from C-CDA IG sections 2.2 (US Realm Header), 2.2.2 (Author), 2.2.5 (Custodian), and 3.1.1.4 (Author [CCD]). The organization details SHALL conform to the C-CDA IG as referenced above and, in addition:

a. SHALL contain exactly one [1..1] id where @root contains the custodian OID and @extension contains a document identifier that is unique for the custodian.

2. SHALL contain exactly one [1..1] confidentialityCode, which SHALL be at least 'R' for Restricted access to behavioral health information, and which SHALL be 'V' for Very Restricted access when the content is covered by additional restrictive regulations such as the substance use privacy regulations in 42 CFR Part 2.

```xml
<id extension="(Document ID)" root="(Custodian OID)"/>
<confidentialityCode code="V" codeSystem="2.16.840.1.113883.5.25"/>
<custodian><assignedCustodian><representedCustodianOrganization>
  <id root="(Custodian OID)"/>
  <name>XYZ CMH</name>
  <telecom value="tel:(734)555-1212"/>
  <addr>
    <streetAddressLine/></streetAddressLine>
    <city></city><state>MI</state><postalCode></postalCode>
  </addr>
</representedCustodianOrganization></assignedCustodian></custodian>
<author>
  <time value="(New Document Created)"/>
  <assignedAuthor>
    <id nullFlavor="NA"/>
  </assignedAuthor>
  <representedOrganization>
    <id root="(Author OID)"/>
    <name>XYZ CMH (optional)</name>
    <telecom value="tel:(734)555-1212"/>
    <addr>
      <streetAddressLine/></streetAddressLine>
      <city></city><state>MI</state><postalCode></postalCode>
    </addr>
  </representedOrganization>
</author>
```

2.3 Consumer Identification

Consumer ID codes and contact information are contained within ClinicalDocument/recordTarget/patientRole. This information follows the rules from C-CDA IG section 2.2.1 (RecordTarget). These elements SHALL conform to the C-CDA IG as referenced above and, in addition:

1. patientRole SHALL contain exactly one [1..1] id where @root refers to the sending agency’s OID, @assigningAuthorityName contains the name of the sending agency, and @extension refers to the patient ID, case number, or medical record number (MRN) used to identify the patient with respect to the sending agency.
2. **patientRole** SHOULD contain zero or one [0..1] id where
   @root="2.16.840.1.113883.4.1", @assigningAuthorityName="SSN" and
   @extension refers to the patient’s social security number. A provider MAY suppress
   the display of SSN in a rendered document.

3. **patientRole** MAY contain zero or one [0..1] id where
   @root="MichiganMedicaidID", @assigningAuthorityName="Michigan
   Department of Community Health", and @extension refers to the patient’s
   Medicaid ID number.

4. **patientRole** MAY contain zero or more [0..*] id that reflects a patient’s other
   identifiers assigned by other agencies or organizations (such as a CMH or PIHP).

5. **patientRole** SHALL contain at least one [1..*] addr.

   a. When patient has no permanent address, **patientRole** SHOULD contain
      zero or one [0..1] addr that follows the CMH policy for patients with no
      permanent address and

      i. **SHALL** contain exactly one [1..1] @use with a value from the following
         set: {PST for postal, PUB for public, TMP for temporary, PHYS for
         physical visit address}.

Example (from within ClinicalDocument/recordTarget/patientRole):

```xml
<id extension="123456" root="(CMH OID)" assigningAuthorityName="XYZ CMH"/>
<id extension="9876543210123" root="1.3.6.1.4.1.40337"
    assigningAuthorityName="CMS"/>
<id extension="000-00-0000" root="2.16.840.1.113883.4.1"
    assigningAuthorityName="SSN"/>
<addr use="TMP">
    <streetAddressLine></streetAddressLine>
    <city></city><state>MI</state><postalCode></postalCode>
</addr>
```

2.4 **Consumer Details and Demographics**

   The patient element ([ClinicalDocument/recordTarget/patientRole/patient])
   follows the rules from C-CDA IG sections 2.2.1.1 (Patient), 2.2.1.2 (Guardian), and
   2.2.1.4 (LanguageCommunication). Some demographic details are recommended or
   optional in the C-CDA IG. In the state of Michigan, demographic details that are
   required for state reporting to MDCH are highly recommended for inclusion within a
   CCD for the purposes of master patient indexing, but do not need to be included in the
   human-readable rendering of the document. The following qualifying elements are
   found in the xml header. These elements **SHALL** conform to the C-CDA IG as referenced
   above and, in addition:

   1. **patient** SHOULD contain zero or one [0..1] raceCode.
   2. **patient** MAY contain zero or more [0..*] sdwg:raceCode.
   3. **patient** SHOULD contain zero or one [0..1] ethnicGroupCode.
   4. **patient** SHOULD contain zero or more [0..*] languageCommunication.

   ¹ This should ultimately be the OID for the Michigan Medicaid ID, however as of the date of this
document, no such OID was registered.
a. If present, at least one languageCommunication SHOULD contain zero or one [0..1] preferenceInd with @value="true" to indicate primary language.

Example (from within ClinicalDocument/recordTarget/patientRole/patient):

```xml
<raceCode code="2106-3" displayName="White"
  codeSystem="2.16.840.1.113883.6.238"
  codeSystemName="Race &amp; Ethnicity - CDC"/>
<ethnicGroupCode code="2186-5"
  displayName="Not Hispanic or Latino"
  codeSystem="2.16.840.1.113883.6.238"
  codeSystemName="Race &amp; Ethnicity - CDC"/>
<languageCommunication>
  <languageCode code="en-US"/>
  <proficiencyLevelCode code="E" displayName="Excellent"
    codeSystem="2.16.840.1.113883.5.61"
    codeSystemName="LanguageAbilityProficiency"/>
  <preferenceInd value="true"/>
</languageCommunication>
<guardian>
  <code code="GRFTH" displayName="Grandfather"
    codeSystem="2.16.840.1.113883.5.111"
    codeSystemName="RoleCode"/>
  <addr use="HP"><streetAddressLine/><city/><state/><postalCode/></addr>
  <telecom value="tel:(734)555-1212" use="HP"/>
  <guardianPerson><name><given/></name><family/></name></guardianPerson>
</guardian>
```

2.5 Episode and Care Team

The 'who' and 'when' describing the provision of care is contained within ClinicalDocument/documentationOf/serviceEvent, which is documented within C-CDA IG sections 2.2.11 (DocumentationOf/serviceEvent) and 3.1.1.3 (DocumentationOf/serviceEvent [CCD]). "serviceEvent/performer represents the healthcare providers involved in the current or pertinent historical care of the patient ...[including] primary physician and any active consulting physicians, therapists, and counselors." (C-CDA IG, pp. 85-86). For each performer of the care team, the following information should be provided if available.

- The NPI of the provider or the provider's organization.

These elements SHALL conform to the C-CDA IG as referenced above and, in addition:

1. For a generic healthcare provider, serviceEvent SHOULD contain zero or more [0..*] performer such that it:
   a. SHOULD contain exactly one [1..1] assignedEntity such that it
      i. SHOULD include zero or one [0..1] code such that @code is a value from the NUCC provider taxonomy
   b. SHOULD include exactly one [1..1] assignedPerson referring to a person who fulfills the role described by code/@code referenced above.
c. **SHOULD** include zero or one [0..1] id where
   @root="2.16.840.1.113883.4.6" (NPI) and @extension is the NPI number.

2. For a case manager or care coordinator: within the set of **performer** defined above, there **SHOULD** be zero or more [0..*] **performer** such that
   a. **performer/assignedEntity/code/@code**="171M00000X"
   b. **performer/assignedEntity/assignedPerson** refers to the patient's case manager and/or care coordinator

3. For the patient's psychiatrist: within the set of **performer** defined above, there **SHOULD** be zero or more [0..*] **performer** such that
   a. **performer/assignedEntity/code/@code**="2084P0800X"
   b. **performer/assignedEntity/assignedPerson** refers to the patient's psychiatrist

4. For a patient's primary care provider: within the set of **performer** defined above, there **SHOULD** be zero or more [0..*] **performer** such that it
   a. **SHALL** include exactly one [1..1] functionCode that contains @code="PCP"
   b. **performer/assignedEntity/assignedPerson** refers to the patient's primary care physician

Example

```xml
<documentationOf>
<serviceEvent classCode="PCPR">
  <effectiveTime>
    <low value="(beginning of care)"/>
    <high value="(CCD creation date, or end of care)"/>
  </effectiveTime>
  <performer typeCode="PRF">
    <assignedEntity>
      <id extension="(NPI)" root="2.16.840.1.113883.4.6"/>
      <code code="2084P0800X" displayName="Psychiatrist" codeSystem="2.16.840.1.113883.6.101" codeSystemName="NUCC"/>
      <telecom value="tel:(734)555-1212"/>
      <addr><streetAddressLine/><city/><state/><postalCode/></addr>
      <assignedPerson><name><given/><family/></name></assignedPerson>
    </assignedEntity>
  </performer>
  <performer typeCode="PRF">
    <assignedEntity>
      <id extension="(NPI)" root="2.16.840.1.113883.4.6"/>
      <code code="171M00000X" displayName="Case Manager / Care Coordinator" codeSystem="2.16.840.1.113883.6.101" codeSystemName="NUCC"/>
      <telecom value="tel:(734)555-1212"/>
      <addr><streetAddressLine/><city/><state/><postalCode/></addr>
      <assignedPerson><name><given/><family/></name></assignedPerson>
    </assignedEntity>
  </performer>
</serviceEvent>
```
3 Required Sections

The required sections provide a minimum clinical data set for the BH CCD. This includes Allergies (alerts), Problem List, Medications, Procedures and Results. All sections are presumed to be defined as described in the C-CDA IG unless otherwise specified.

3.1 Allergies Section

This section lists and describes any medication allergies, adverse reactions, idiosyncratic reactions, reactions to food items, and metabolic variations or adverse reactions/allergies to other substances (such as latex, iodine, tape adhesives) used to assure the safety of health care delivery. At a minimum, it should list currently active and any relevant historical allergies and adverse reactions.

The BH CCD SHALL contain an Allergies section and its elements SHALL conform to the C-CDA IG Section 4.2 (Allergies Section).

3.2 Problem List Section

This section lists and describes all relevant clinical problems at the time the document is generated. At a minimum, all pertinent current problems should be listed.

The BH CCD SHALL contain a Problems section which SHALL conform to the C-CDA IG Section 4.44 (Problems Section) and, in addition:

1. The act/observation:
   a. SHOULD contain exactly one [1..1] value where @nullFlavor="OTH" such that it:
      i. SHALL contain exactly one translation where @code is the DSM-IV code for the problem, @displayName is the DSM-IV description for the problem, @codeSystem="2.16.840.1.113883.6.126", and @codeSystemName="DSM-IV"
   b. SHOULD contain exactly one [1..1] value where @nullFlavor="OTH" such that it:
      i. SHALL contain exactly one translation where @code is the DSM-IV Axis (I, II, or III) for the problem coded using the SNOMED codes in
the table below, \texttt{codeSystem}="2.16.840.1.113883.6.96", and \texttt{codeSystemName}="SNOMED-CT"

<table>
<thead>
<tr>
<th>Axis</th>
<th>SNOMED Code</th>
<th>SNOMED Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axis I</td>
<td>899001</td>
<td>Axis I diagnosis (disorder)</td>
</tr>
<tr>
<td>Axis II</td>
<td>56641006</td>
<td>Axis II diagnosis (disorder)</td>
</tr>
<tr>
<td>Axis III</td>
<td>89016005</td>
<td>Axis III diagnosis (disorder)</td>
</tr>
</tbody>
</table>

c. **SHOULD** contain one Problem Status \texttt{entryRelationship} as defined in the C-CDA IG.

2. The \texttt{problemConcernAct} **SHOULD** contain exactly one \([1..1]\) \texttt{performer} for the clinician making the diagnosis.

The value translation for DSM-IV in this section may look similar to the following example:

\[
<value nullFlavor="OTH">
  <translation code="296.30" codeSystemName="DSM-IV" codeSystem="2.16.840.1.113883.6.126" display Name="#ProbCode1"/>
</value>
\]

The value translation for Axis in this section may look similar to the following example:

\[
<value nullFlavor="OTH">
  <translation code="899001" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED-CT" display Name="#Axis I di agnosis (disorder)"/>
</value>
\]

The Problem Status \texttt{entryRelationship} in this section may look similar to the following example:

\[
<entryRelationship typeCode="REFR">
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.6"/>
    <!-Problem Status template [Optional] -->
    <code code="33999-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" display Name="Status"/>
    <text>
      <reference value="#ProbStatus1"/>
    </text>
    <statusCode code="completed"/>
    <value xsi:type="CE" code="55561003" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT" display Name="Active"/>
  </observation>
</entryRelationship>
\]

3.3 **Medications Section**

The Medications section defines a patient’s current medications and pertinent medication history. At a minimum, the currently active medications are to be listed, with an entire medication history as an option. The section may also include a patient’s prescription and dispense history.
This section requires that there be either an entry indicating the subject is not known to be on any medications, or that there be entries summarizing the subject’s medications.

The BH CCD SHALL contain a **Medications** section which SHALL conform to the C-CDA IG 4.33 (Medications Section).

### 3.4 Procedures Section

This section defines all interventional, surgical, diagnostic, or therapeutic procedures or treatments pertinent to the patient historically at the time the document is generated. The section is intended to include notable procedures, but can contain all procedures for the period of time being summarized.

For the purposes of the BH CCD, this section will be used to describe services received from the behavioral health agency (grouped by CPT/HCPCS code), and to summarize the number of encounters received under each service/procedure code during the relevant period.

The BH CCD **SHALL** contain a **Procedures** section which **SHALL** conform to the C-CDA IG Section 4.52 (Procedures Section) and, in addition:

1. The BH CCD **SHALL** contain one or more [1..*] **entry** such that it contains exactly one [1..1] **act** (Procedures Activity) such that it:
   a. **SHALL** contain exactly one [1..1] **code** which **SHALL** comply with one of the following:
      i. be selected from LOINC (CodeSystem: 2.16.840.1.113883.6.1) or SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96) in which case the code **SHALL** include a translation to CPT/HCPCS (CodeSystem 2.16.840.1.113883.6.12), or
      
      ii. be selected from CPT/HCPCS (CodeSystem 2.16.840.1.113883.6.12) in which case a translation is unnecessary.
   b. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
      i. **SHALL** contain a lowValue of the beginning of the period for which this type of activity was gathered (e.g. over the past 12 months from 05/13/2013, would be ‘20120513’).
      
      ii. **SHALL** contain a highValue of the date of the most recent occurrence of this type of activity.
   c. **SHALL** contain exactly one [1..1] **entryRelationship** which:
      i. **SHALL** contain exactly one [1..1] **act** which:
         1. **SHALL** contain exactly one [1..1] **observation** which
            a. **SHALL** contain exactly one [1..1] **code** such that
               @code="11346-4", @displayName="History of Outpatient Visits", and
               @codeSystem="2.16.840.1.113883.6.1" (LOINC).
            b. **SHALL** contain exactly one [1..1] **code** such that
               @code="238699011", @displayName="Number of
Appointments Attended", and
@codeSystem="2.16.840.1.113883.6.96" (SNOMED-CT)

c. SHALL contain exactly one [1..1] repeatNumber which
   i. SHALL have a @value to indicate the integer
      quantity of visits of this type of activity that
      occurred during the time period indicated
      above.

The translation of the code of the Procedure Activity entry would look similar to the
following example:

```xml
<translation code="ProcCode1" codeSystemName="CPT-4"
codeSystem="2.16.840.1.113883.6.12" displayName="#ProcDesc1"/>
```

The effectiveTime of the Procedure Activity entry would look similar to the following
example:

```xml
<effectiveTime>
  <low value='20120513'/>
  <high value='#ProcDate1'/>
</effectiveTime>
```

The entryRelationship of the code of the Procedure Activity entry would look similar to
the following example:

```xml
<entryRelationship typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.69"/>
    <!-- Assessment Scale Observation -->
    <id root="f4dce790-8328-11db-9fe1-0800200c9a22"/>
    <code code="11346-4" displayName="History of Outpatient visits"
codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
    <code code="238699011" codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMED CT" displayName="Number of Appointments Attended"/>
    <statusCode code="completed"/>
    <repeatNumber value="#ProcQuantity1"/>
  </observation>
</entryRelationship>
```

### 3.5 Results Section

The Results section contains the results of observations generated by laboratories,
imaging procedures, and other procedures. For the BH CCD, this section may also be
used to report results of other assessments. For example, this section can be used to
report a Global Assessment of Functioning (GAF) score for Axis V.

The BH CCD SHALL contain a Results section and its elements SHALL conform to the
C-CDA IG Section 4.55 (Results Section) and, in addition:

1. The results organizer (C-CDA IG 5.71) SHOULD contain zero or one [0..1]
   observation (C-CDA IG 5.70) to report DSM Axis V GAF such that it:
   a. SHALL contain exactly one [1..1] code, with @code="284061009",
      @codeSystem="2.16.840.1.113883.6.96" (SNOMED-CT), and
      @displayName="Global assessment of functioning".
b. **SHALL** contain exactly one [1..1] `statusCode`, with `@code="completed"`

   i. **SHALL** contain exactly one [1..1] `value` where `@xsi:type="INT"` and `@value` indicates the patient's GAF score.

### 4 Recommended Sections

The following sections, while not required, are recommended to be included in the BH CCD. Nevertheless, these sections may be required due to the purpose of the exchange or applicable regulations such as Meaningful Use.

#### 4.1 Vital Signs

The Vital Signs section tracks a patient’s relevant vital signs readings including blood pressure, height, weight, BMI, etc.

The BH CCD **SHOULD** contain a **Vital Signs** section which, if included, **SHALL** conform to the C-CDA IG Section 4.60 (Vital Signs Section).

#### 4.2 Advance Directives

The Advance Directives Section typically includes a listing of the applicable directives contained in a more formal legal advance directive document. For the purposes of the BH CCD, the Advance Directives Section will only require a limited subset of information. In particular, if the Advance Directive Section is included in the BH CCD, the section must include an indication of whether an advance directive for mental health exists. It may, but need not, include additional, specific directives.

The BH CCD **SHOULD** contain an **Advance Directives** section which, if included, **SHALL** conform to C-CDA IG Section 4.1 and, in addition:

1. The existence of a Mental Health Advanced Directive **SHALL** be indicated by the inclusion of exactly one [1..1] `entry` which:

   a. **SHALL** contain exactly one [1..1] `observation` (Advance Directive Observation), which:

      i. **SHALL** contain exactly one `code`, with `@code="10831004"`, `@codeSystem="2.16.840.1.113883.6.96"` (SNOMED-CT), and `@displayName="Psychological AND/OR psychiatric procedure AND/OR service"`.

Example:

```xml
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.21.1"/>
  <!-- Template with coded entries required. -->
  <code code="42348-3" codeSystem="2.16.840.1.113883.6.1"/>
  <title>Advance Directives</title>
  <text>
    ...
  </text>
  <entry>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.48"/>
      <id root="9b54c3c9-1673-49c7-aef9-b037ed72ed27"/>
    </observation>
  </entry>
</section>
```
<observation
  code="10831004" codeSystem="2.16.840.1.113883.6.96"
displayName="Psychologic AND/OR psychiatric procedure AND/OR service"
  statusCode="completed">
  <effectiveTime>
    <low value="20110213"/>
    <high nullFlavor="NA"/>
  </effectiveTime>
  <participant typeCode="VRF">
    <templateId root="2.16.840.1.113883.10.20.1.58"/>
    <time value="201102013"/>
    <participantRole>
      <id root="20cf14fb-b65c-4c8c-a54d-b0cca834c18c"/>
      <playingEntity>
        <name>
          <prefix>Dr.</prefix>
          <family>Dolin</family>
          <given>Robert</given>
        </name>
        </playingEntity>
      </participantRole>
    </participant>
  </participant typeCode="CST">
    <participantRole classCode="AGNT">
      <addr>
        <streetAddressLine>21 North Ave.</streetAddressLine>
        <city>Burlington</city>
        <state>MA</state>
        <postalCode>02368</postalCode>
        <country>US</country>
      </addr>
      <telecom value="tel:(555)555-1003"/>
      <playingEntity>
        <name>
          <prefix>Dr.</prefix>
          <family>Dolin</family>
          <given>Robert</given>
        </name>
        </playingEntity>
      </participantRole>
    </participant>
  <reference typeCode="REFR">
    <separatableInd value="false"/>
    <externalDocument>
      <id root="b50b7910-7ff4-b4c-bbe4-177ed68cbbf3"/>
      <text mediaType="application/pdf">
        <reference value="AdvanceDirective.b50b7910-7ff4-b4c-bbe4-177ed68cbbf3.pdf"/>
      </text>
    </externalDocument>
  </reference>
</observation>
4.3 Functional Status

The Functional Status Section describes "the patient's physical state, status of functioning, and environmental status." This can include information about activities of daily living (ADLs); ambulatory ability; communication ability, such as speech or writing; or perception, such as sight or hearing. Limitations that may interfere with self-care or with the therapeutic process should be documented, as should any improvements or changes in functional status.

The BH CCD SHOULD contain a Functional Status section which, if included, SHALL conform to the C-CDA IG Section 4.14 (Functional Status Section).

4.4 Social History

In the BH CCD, the Social History Section can be used to list psychosocial and environmental problems normally indicated on Axis IV.

This section should also be used to include MDCH-required Quality Improvement (QI) demographics such as Education Level, Employment Status, Residential Living Arrangement, etc. Under this specification, the BH CCD will include entries identified using SNOMED codes, with the applicable values using MDCH's established QI demographics codes.

The BH CCD SHOULD contain a Social History section which, if included SHALL conform to the C-CDA IG Section 4.57 (Social History Section) and, in addition:

1. Each MDCH QI demographics element shall be an entry of type Social History Observation as described in C-CDA IG 5.76 and, in addition:
   a. SHALL contain exactly one [1..1] code which:
      i. SHALL be selected from the SNOMED-CT (Code System 2.16.840.1.113883.6.96) codes from the following table:

<table>
<thead>
<tr>
<th>MDCH QI Element</th>
<th>SNOMED Code</th>
<th>SNOMED Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education Level / Highest Grade</td>
<td>105421008</td>
<td>Educational Achievement</td>
</tr>
<tr>
<td>Employment Status / Earning Minimum Wage</td>
<td>364703007</td>
<td>Employment Detail</td>
</tr>
<tr>
<td>Corrections Status</td>
<td>365566008</td>
<td>Prison Record and Criminal Activity Details</td>
</tr>
<tr>
<td>Residential Living Arrangement</td>
<td>365508006</td>
<td>Residence and Accommodation Circumstances</td>
</tr>
<tr>
<td>Veteran Status</td>
<td>365549006</td>
<td>History Relating to Military Service</td>
</tr>
<tr>
<td>Disability Designation (General)</td>
<td>16104006</td>
<td>Entitled to Benefits</td>
</tr>
<tr>
<td>Disability Designation – Patient Meets SPMI Criteria</td>
<td>74732009</td>
<td>Mental Disorder</td>
</tr>
<tr>
<td>Disability Designation – Patient Meets DD Criteria</td>
<td>129104009</td>
<td>Developmental Mental Disorder</td>
</tr>
</tbody>
</table>
b. **SHALL** contain zero or one [0..1] **value** of type **CD** with **@code**="[MDCH QI Value]", **@codeSystem**="MDCHQI"{}, and **@displayName**="[MDCH Description for the coded value]"

Example:

```xml
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.17"/>
  <code code="29762-2" codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC" displayNovane="Social history"/>
  <title>Social History</title>
  <text>...</text>
  <entry>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.38"/>
      <code code="105421008" codeSystem="2.16.840.1.113883.6.96"
         codeSystemName="SNOMED-CT" displayNovane="Educational Achievement"/>
      <statusCode code="completed"/>
      <value xsi:type="CD" code="8" codeSystem="MDCHQI"
          displayNovane="College graduate"/>
    </observation>
  </entry>
  <entry>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.38"/>
      <code code="364703007" codeSystem="2.16.840.1.113883.6.96"
         codeSystemName="SNOMED-CT" displayNovane="Employment Detail"/>
      <statusCode code="completed"/>
      <value xsi:type="CD" code="3" codeSystem="MDCHQI" displayNovane="Minimum Wage: N/A"/>
    </observation>
  </entry>
  <entry>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.38"/>
      <code code="365566008" codeSystem="2.16.840.1.113883.6.96"
         codeSystemName="SNOMED-CT" displayNovane="Prison record and criminal activity details"/>
      <statusCode code="completed"/>
      <value xsi:type="CD" code="8" codeSystem="MDCHQI" displayNovane="Awaiting trial"/>
    </observation>
  </entry>
  <entry>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.38"/>
      <code code="365508006" codeSystem="2.16.840.1.113883.6.96"
         codeSystemName="SNOMED-CT" displayNovane="Residence and accommodation circumstances"/>
      <statusCode code="completed"/>
    </observation>
  </entry>
</section>
```

\(^2\) This should ultimately be the OID for the MDCH QI code set, however as of the date of this document, no such OID was registered.
<value xsi:type="CD" code="13" codeSystem="MDCHQI" displayName="Institutional setting (congregate care facility, boarding schools, Child Caring Institutions, state facilities)"/>
</observation>
</entry>
<entry>
<observation classCode="OBS" moodCode="EVN">
<templateId root="2.16.840.1.113883.10.20.22.4.38"/>
<code code="365549006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED-CT" displayName="History relating to military service"/>
<statusCode code="completed"/>
<value xsi:type="CD" code="N" codeSystem="MDCHQI" displayName="No"/>
</observation>
</entry>
<entry>
<observation classCode="OBS" moodCode="EVN">
<templateId root="2.16.840.1.113883.10.20.22.4.38"/>
<code code="16104006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED-CT" displayName="Entitled to benefits"/>
<statusCode code="completed"/>
<value xsi:type="CD" code="D" codeSystem="MDCHQI" displayName="DD"/>
</observation>
</entry>
<entry>
<observation classCode="OBS" moodCode="EVN">
<templateId root="2.16.840.1.113883.10.20.22.4.38"/>
<code code="74732009" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED-CT" displayName="Mental disorder"/>
<statusCode code="completed"/>
<value xsi:type="CD" code="2" codeSystem="MDCHQI" displayName="No"/>
</observation>
</entry>
<entry>
<observation classCode="OBS" moodCode="EVN">
<templateId root="2.16.840.1.113883.10.20.22.4.38"/>
<code code="129104009" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED-CT" displayName="Developmental mental disorder"/>
<statusCode code="completed"/>
<value xsi:type="CD" code="1" codeSystem="MDCHQI" displayName="Yes"/>
</observation>
</entry>
<entry>
<observation classCode="OBS" moodCode="EVN">
<templateId root="2.16.840.1.113883.10.20.22.4.38"/>
<code code="66214007" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED-CT" displayName="Substance abuse"/>
<statusCode code="completed"/>
<value xsi:type="CD" code="2" codeSystem="MDCHQI" displayName="No SUD"/>
</observation>
</entry>
</section>
4.5 Plan of Care

The Plan of Care Section for the BH CCD is used to track key information relating to the individual’s Individual Plan of Service (IPOS). This section assumes all IPOSs contain start date, end date, and goals. In addition, many IPOSs also contain objectives related to applicable goals. An IPOS is indicated by an entry that contains one act. The start and end dates of the IPOS are indicated by the effectiveTime attribute on the IPOS act. A goal is indicated by an act in a component entryRelationship to the plan, and an objective is indicated by an act in a component entryRelationship to its parent goal.

The BH CCD SHOULD contain a Plan of Care section which, if included, SHALL conform to the C-CDA IG Section 4.39 (Plan of Care Section) and, in addition:

1. SHOULD contain exactly one [0..1] entry such that it:
   a. SHALL contain exactly one [1..1] act (Plan of Care Activity Act) which:
      i. SHALL contain exactly one [1..1] effectiveTime which:
         1. SHALL contain exactly one [1..1] low corresponding to the start date of the plan
         2. SHALL contain exactly one [1..1] high corresponding to the expiration date of the plan
      ii. SHALL contain one or more [1..*] entryRelationship to represent a Goal which:
         1. SHALL contain exactly one [1..1] typeCode with @value="COMP".
         2. SHALL contain exactly one [1..1] sequenceNumber, which SHALL be a consecutively numbered integer indicating the sequence of the Goal.
         3. SHALL contain exactly one [1..1] Goal, coded as an act which:
            a. SHALL contain one or more [1..*] id
            b. SHOULD contain exactly one [1..1] effectiveTime which:
               i. SHALL contain exactly one [1..1] low corresponding to the start date of the Goal
               ii. SHALL contain exactly one [1..1] high corresponding to the expected completion date of the Goal
            c. MAY contain zero or more [0..*] entryRelationship to represent an Objective which:
               i. SHALL contain exactly one [1..1] typeCode with @value="COMP".
               ii. SHALL contain exactly one [1..1] sequenceNumber, which SHALL be a
consecutively numbered integer indicating the sequence of the Objective.

iii. **SHALL** contain exactly one [1..1] Objective, coded as an act which:

iv. **SHALL** contain one or more [1.."] id

v. **SHOULD** contain exactly one [1..1] effectiveTime which:

1. **SHALL** contain exactly one [1..1] **low** corresponding to the start date of the Objective

2. **SHALL** contain exactly one [1..1] **high** corresponding to the expected completion date of the Objective

Example:

```xml
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.10"/>
  <code code="18776-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Treatment plan"/>
  <title>Plan of Care</title>
  <text> . . . </text>
  <entry>
    <act classCode="ACT">
      <templateId root="2.16.840.1.113883.10.20.22.4.39"/>
      <effectiveTime>
        <low value="20120209"/>
        <high value="20130208"/>
      </effectiveTime>
      <entryRelationship typeCode="COMP">
        <sequenceNumber value='1'/>
        <act classCode="ACT">
          <templateId root="2.16.840.1.113883.10.20.22.4.39"/>
          <id root="1" extension="1.1"/>
          <text>John wants to live at the 123 Test Street home.</text>
          <effectiveTime>
            <low value="20120209"/>
            <high value="20130208"/>
          </effectiveTime>
          <entryRelationship typeCode="COMP">
            <sequenceNumber value='1'/>
            <act classCode="ACT">
              <templateId root="2.16.840.1.113883.10.20.22.4.39"/>
              <id root="1A" extension="1.1"/>
              <text>John will participate in community outings with 123 Test Street staff.</text>
              <effectiveTime>
                <low value="20120209"/>
                <high value="20130208"/>
              </effectiveTime>
            </act>
          </entryRelationship>
        </act>
      </entryRelationship>
    </act>
  </entry>
</section>
```
<sequenceNumber value='2'/>
<act classCode="ACT">
  <templateId root="2.16.840.1.113883.10.20.22.4.39"/>
  <id root="1B" extension="1.1"/>
  <text>John will communicate to home staff, the outings that he would like to go on.</text>
  <effectiveTime>
    <low value="20120209"/>
    <high value="20130208"/>
  </effectiveTime>
</act>
</entryRelationship>
<entryRelationship typeCode="COMP">
  <sequenceNumber value='2'/>
  <act classCode="ACT">
    <templateId root="2.16.840.1.113883.10.20.22.4.39"/>
    <id root="2" extension="1.1"/>
    <text>John wants to stay healthy.</text>
    <effectiveTime>
      <low value="20120209"/>
      <high value="20130208"/>
    </effectiveTime>
  </act>
  <entryRelationship typeCode="COMP">
    <sequenceNumber value='1'/>
    <act classCode="ACT">
      <templateId root="2.16.840.1.113883.10.20.22.4.39"/>
      <id root="2A" extension="1.1"/>
      <text>John will attend appointments with CMH psychiatric nurse, Lisa Low quarterly or as scheduled.</text>
      <effectiveTime>
        <low value="20120209"/>
        <high value="20130208"/>
      </effectiveTime>
    </act>
  </entryRelationship>
</act>
</entryRelationship>

4.6 Encounters Section

The Encounters Section is used to track the programs that the patient is admitted to / enrolled in at the relevant CMH or agency on an ongoing basis. Relevant attributes should be populated in that context (e.g., effectiveTime indicates the date of admission, discharge, etc.). Thus, an admission to a PIHP or CMH will result in an encounter activity indicating that the patient is admitted to the relevant agency, with an effectiveTime of the date of admission. Likewise, admission to a program within that agency could also represent encounter activity to be included in this section.

The BH CCD SHOULD contain an Encounters section which, if included, SHALL conform to the C-CDA IG Section 4.11 (Encounters Section) and, in addition:

1. SHALL contain one or more [1..*] encounter which:
a. **SHALL** contain exactly one [1..1] **code** with `@code="281685003"`, 
   `@codeSystem="2.16.840.1.113883.6.96"` (SNOMED-CT), and  
   `@displayName="Admission for Care"`

a. **SHALL** contain one or more [1..*] **performer** which:
   
i. **SHALL** contain exactly one [1..1] **assignedEntity**

   ii. **SHOULD** contain exactly one [1..1] **representedOrganization** (or, if
       more appropriate, exactly one [1..1] **assignedPerson**) which:

       1. **SHALL** contain exactly one [1..1] **name**

       2. **SHALL** contain exactly one [1..1] **addr**

Example:

```xml
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.22"/>
  <!-- Encounters Section - Entries optional -->
  <code code="46240-8" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC" displayName="History of encounters"/>
  <title>Encounters</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <encounter classCode="ENC" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.49"/>
      <!-- Encounter Activities -->
      <id root="2a620155-9d11-439e-92b3-5d9815ff4de8"/>
      <code code="281685003" codeSystem="2.16.840.1.113883.6.96"
        displayName="Admission for Care"/>
      <effectiveTime>
        <low value="20120209"/>
      </effectiveTime>
      <performer>
        <assignedEntity>
          <representedOrganization>
            <id root="e7337dad-62e1-42dd-82f9-6fe068d03696"/>
            <name>ABC County CMH Authority</name>
            <addr>
              <streetAddressLine>123 Main Street</streetAddressLine>
              <city>Anytown</city>
              <state>MI</state>
              <postalCode>12345-0000</postalCode>
            </addr>
          </representedOrganization>
          <assignedEntity>
          </assignedEntity>
        </assignedEntity>
      </performer>
    </encounter>
  </entry>
</section>
```

5 Optional Sections

All other sections are considered optional and should be included only to the extent appropriate under the specific purpose and circumstances of the data exchange
relationship. Nothing contained in this BH CCD IG should be interpreted to prohibit the inclusion of additional data elements as necessary, including those sections or data required by applicable regulations such as Meaningful Use, etc.