

Continuity of Care Document - CCD

Presentation to WorldVistA
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Agenda

- What is the CCD?
- CCD Sections
- CCD - Human Readable
- CCD - Machine Readable
- CCD Use Cases
- CCD and HIPAA
- CCD and CCHIT
- CCD and WorldVista
- Opensource CCD Support
- Continuityofcare.net

What is the CCD?

- The Continuity of Care Document (CCD) is an HL7 XML standard adopted in March, 2007 for the exchange of electronic clinical records
- The CCD represents a merger of the CCR (ASTM) and the CDA (HL7) and replaces both of these (CCD=CCR+CDA)
- HL7 has also negotiated with CMS to use the CCD in place of the CDA for the HIPAA Claims Attachment Rule
- The CCD is both “human readable” (via browser) and “machine readable” (import into EHR system) and has wide healthcare industry support

CCD Sections

- **EHR**
 - **CCRDocumentObjectID**
 - **DateTime**
 - **Patient**
 - **From**
 - **To**
 - **Purpose**
 - **Body**
 - **Insurance**
 - **AdvanceDirectives**
 - **Support**
 - **FunctionalStatus**
 - **Problems**
- **FamilyHistory**
- **SocialHistory**
- **Alerts**
- **Medications**
- **Allergies**
- **MedicalEquipment**
- **Immunizations**
- **VitalSigns**
- **Results**
- **Procedures**
- **Encounters**
- **PlanOfCare**
- **HealthCareProviders**

Human Readable

Good Health Clinic Continuity of Care Document

Created On: April 7, 2000



Patient:	Henry Levin , the 7th	MRN: 996-756-495
Birthdate:	September 24, 1932	Sex: Male
Guardian:	Kenneth Ross 17 Daws Rd. Blue Bell, MA, 02368 tel:  (888)555-1212 	Next of Kin: Henrietta Levin tel:(999)555-1212

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Human Readable

Summary Purpose

Transfer of care

Payers

Payer name	Policy type / Coverage type	Covered party ID	Authorization(s)
Good Health Insurance	Extended healthcare / Self	14d4a520-7aae-11db-9fe1-0800200c9a66	Colonoscopy

Advance Directives

Directive	Description	Verification	Supporting Document(s)
Resuscitation status	Do not resuscitate	Dr. Robert Dolin, Nov 07, 1999	Advance directive

Functional Status

Functional Condition	Effective Dates	Condition Status
Dependence on cane	1998	Active
Memory impairment	1999	Active

Problems

Condition	Effective Dates	Condition Status
Asthma	1950	Active
Pneumonia	Jan 1997	Resolved
"	Mar 1999	Resolved
Myocardial Infarction	Jan 1997	Resolved

Human Readable

Family history

Father (deceased)

Diagnosis	Age At Onset
Myocardial Infarction (cause of death)	57
Hypertension	40

Mother (alive)

Diagnosis	Age At Onset
Asthma	30

Social History

Social History Element	Description	Effective Dates
Cigarette smoking	1 pack per day	1947 - 1972
"	None	1973 -
Alcohol consumption	None	1973 -

Allergies, Adverse Reactions, Alerts

Substance	Reaction	Status
Penicillin	Hives	Active
Aspirin	Wheezing	Active
Codeine	Nausea	Active

Human Readable

Medications

Medication	Instructions	Start Date	Status
Albuterol inhalant	2 puffs QID PRN wheezing		Active
Clopidogrel (Plavix)	75mg PO daily		Active
Metoprolol	25mg PO BID		Active
Prednisone	20mg PO daily	Mar 28, 2000	Active
Cephalexin (Keflex)	500mg PO QID x 7 days (for bronchitis)	Mar 28, 2000	No longer active

Medical Equipment

Supply/Device	Date Supplied
Automatic implantable cardioverter/defibrillator	Nov 1999
Total hip replacement prosthesis	1998
Wheelchair	1999

Immunizations

Vaccine	Date	Status
Influenza virus vaccine, IM	Nov 1999	Completed
Influenza virus vaccine, IM	Dec 1998	Completed
Pneumococcal polysaccharide vaccine, IM	Dec 1998	Completed
Tetanus and diphtheria toxoids, IM	1997	Completed

Human Readable

Vital Signs

Date / Time:	Nov 14, 1999	April 7, 2000
Height	177 cm	177 cm
Weight	86 kg	88 kg
Blood Pressure	132/86 mmHg	145/88 mmHg

Results

	March 23, 2000	April 06, 2000
<i>Hematology</i>		
HGB (M 13-18 g/dl; F 12-16 g/dl)	13.2	
WBC (4.3-10.8 10 ³ /ul)	6.7	
PLT (135-445 meq/l)	123*	
<i>Chemistry</i>		
NA (135-145 meq/l)		140
K (3.5-5.0 meq/l)		4.0
CL (98-106 meq/l)		102
HCO ₃ (18-23 meq/l)		35*

Procedures

Procedure	Date
Total hip replacement, left	1998

Human Readable

Encounters

Encounter	Location	Date
Checkup Examination	Good Health Clinic	Apr 07, 2000

Plan

Planned Activity	Planned Date
Pulmonary function test	April 21, 2000

Electronically generated by: Good Health Clinic on April 7, 2000

Machine Readable

```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="CCD.xsl"?>
<!-- The following sample document depicts a fictional character's health summary. Any resemblance to a real person
is coincidental. -->
<ClinicalDocument xmlns="urn:hl7-org:v3" xmlns:voc="urn:hl7-org:v3/voc"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:hl7-org:v3 CDA.xsd">
  <!--
*****
CDA Header
*****
-->
  <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
  <templateId root="2.16.840.1.113883.10.20.1"/> <!-- CCD v1.0 Templates Root -->
  <id root="db734647-fc99-424c-a864-7e3cda82e703"/>
  <code code="34133-9" codeSystem="2.16.840.1.113883.6.1" displayName="Summarization of episode note"/>
  <title>Good Health Clinic Continuity of Care Document</title>
  <effectiveTime value="20000407130000+0500"/>
  <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/>
  <languageCode code="en-US"/>
  <recordTarget>
    <patientRole>
      <id extension="996-756-495" root="2.16.840.1.113883.19.5"/>
      <patient>
        <name>
          <given>Henry</given>
          <family>Levin</family>
          <suffix>the 7th</suffix>
        </name>
        <administrativeGenderCode code="M" codeSystem="2.16.840.1.113883.5.1"/>
        <birthTime value="19320924"/>
      </patient>
      <providerOrganization>
        <id root="2.16.840.1.113883.19.5"/>
        <name>Good Health Clinic</name>
      </providerOrganization>
    </patientRole>
  </recordTarget>
```

CCD Use Cases - Personal Health Communication

- Acute Care Summary of Care to Personal Health Record
- Family provides Health Summary to Adult Day Care Center
- Personal Health Advocacy and Management
- Lifespanning Health Records Kept by Individuals
- Nursing Home to Personal Health Record
- PT or OT to Personal Health Record
- CCRC to Personal Health Record for Personal Wellness

source: AHIMA, CAST

CCD Use Cases - Transfer of Care

- Nursing Home to Home Health
- Home Health to Acute Care
- Nursing Home to Emergency Room
- Hospital to Nursing Home
- Hospital to Home Health
- Assisted Living to Nursing Home
- Nursing Home to Assisted Living
- PAC LTC to Hospital
- Nursing Home to Nursing Home
- Nursing Home to Hospital
- Home Care to Home Care
- Home Care to Nursing Home
- Home Care to Assisted Living

source: AHIMA, CAST

CCD Use Cases - Coordination of Care

- Attending Physician in a Nursing Home Setting
- Nursing Home Resident Regularly Visits Dialysis
- Home Care Communication with Family Physician
- Home Health Care delivered to an Assisted Living Resident
- Coordination of Care - Cancer
- Home Care to Acute Care

source: AHIMA, CAST

CCD Use Cases - Health Management / Interdisciplinary Care

- Acute Care informs Family Physician
- Chronic Care Management Over Time
- Physical Therapist Charts to Nursing Home or Home Health Record
- Interdisciplinary Care: Cancer Treatment Center
- PT or OT to Nursing Home
- PT or OT to Home Health
- Rehab to Home Health
- Physician Requests Nutrition Consultation

source: AHIMA, CAST

CCD Use Cases - Administrative Uses

- Managed Care Pre-Certification Request
- Part D Pre-Certification
- Billing Attachments
- Nursing Home Data Reporting
- Home Care Data Reporting

source: AHIMA, CAST

CCD Use Cases - Research Uses

- De-identified Health Record Summary provided to Researcher
- Nursing Home to research
- Home Care to research

source: AHIMA, CAST

CCD and HIPAA

- The CCD will form the basis for the HIPAA Claims Attachment Rule (275)
 - Claims Attachment Transactions will be the CCD transmitted via X12 EDI
- Claims Attachments are being pilot tested today
- The HIPAA Claims Attachment Notice of Proposed Rulemaking (NPRM) is expected this year
- 26 months after the NPRM, the Rule will be final and all Providers will be required to use the transaction
- The CCD will be in wide use for Claims Attachment by 2010

CCD and CCHIT

- CCHIT (Certification Commission for Healthcare Information Technology) requires CCD support for exchanging medical records in 2008
- WorldVistA has obtained CCHIT certification
- WorldVistA will need to support the CCD to remain CCHIT certified

CCD and WorldVista

- The WorldVista CCD project has been underway for several months
- It meets on weekly (Tuesday night) conference calls
- Current focus is CCD mapping to WorldVista and a MUMPS CCD prototype
- We use email and the Internet to collaborate
- *Looking for volunteers to help (please speak to Nancy)*

WorldVista XML Support

- HL7 Export Utility (Part of VistA)
- EasyObjects (VistALink) (Part of VistA)
- M2Web (Jim Self)
- Mumps XML Parser (Part of VistA)
- Kevin's XML Export Tool
- - *none handle the CCD yet - we are evolving the solution*

Kevin's XML Export Tool Output

```
- <FILE id="2" label="PATIENT">
- <Record id="2">
  - <Field id=".01" label="NAME" type="FREE TEXT">
    <LINE>ZZ PATIENT,TEST TWO</LINE>
  </Field>
  - <Field id=".02" label="SEX" type="SET">
    <LINE>MALE</LINE>
  </Field>
  - <Field id=".03" label="DATE OF BIRTH" type="DATE/TIME">
    <LINE>12/25/1957</LINE>
  </Field>
  - <Field id=".033" label="AGE" type="COMPUTED">
    <LINE>49</LINE>
  </Field>
  - <Field id=".05" label="MARITAL STATUS" type="POINTER">
    <LINE>UNKNOWN</LINE>
  </Field>
  - <Field id=".07" label="OCCUPATION" type="FREE TEXT">
    <LINE>SAILOR</LINE>
  </Field>
  - <Field id=".08" label="RELIGIOUS PREFERENCE" type="POINTER">
    <LINE>UNKNOWN/NO PREFERENCE</LINE>
  </Field>
  - <Field id=".083" label="CHECK FOR DUPLICATE" type="SET">
    <LINE>YES</LINE>
  </Field>
  - <Field id=".0905" label="1U4N" type="COMPUTED">
    <LINE>Z</LINE>
  </Field>
  - <Field id=".091" label="REMARKS" type="FREE TEXT">
    <LINE>Test patient only, please use to test, train</LINE>
  </Field>
  - <Field id=".092" label="PLACE OF BIRTH [CITY]" type="FREE TEXT">
    <LINE>BOSTON</LINE>
```

Opensource CCD Support

- Indivo, an opensource system developed by Children's Hospital in Boston, provides a Personal Healthcare Record storage and access system using Webservices
 - Dossia, the employee Personal Healthcare Record service, will use Indivo as its core technology
- Mirth, an opensource HL7 messaging system, can be used to exchange the CCD between authorized systems

Continuityofcare.net

- Website started to support the WorldVista CCD project
- Future plans are to develop seamless CCD interoperability between opensource systems:
 - WorldVista
 - OpenEMR
 - Indivo
 - Mirth
- *currently looking for sponsors*