OneHealthPort HIE

Implementation Guide

Consolidated Clinical Documentation Architecture (C-CDA) Documents for Clinical Data Repository (CDR)

Revised: January 2018 Version 2.2

powered by axway

Table of Contents

1. DOCUMENT CHANGE HISTORY

DOCUMENT NAME: OHP-HIE Implementation Guide – C-CDA Documents			
Version	**Issue Date**	**Modified By**	**Comments/Reason**
1.0	February, 2016	Rhonda May	First draft of Implementation Guide for C-CDA Documents
1.1	February 17, 2016	Rhonda May	Clarification of data confidentiality requirements, update web link, correct typographical errors, add mapping table, add error handling section, add section for C-CDA correction.
1.2	February 22, 2016	Rhonda May	Updated Mapping Table
1.3	March 21, 2016	Rhonda May	Added information about mapping table information available on the OHP HIE website
1.4	April 2016	Rhonda May	Update name element sequence information
1.5	May 2016	Rhonda May	Add specific reference to the version of HL7 C-CDA implementation guide being used for C-CDA processing at the HIE. Update name element sequence information with reference to the implementation guide
1.6	August 2016	Rhonda May	Document enhancements, add/update specificity on data requirements and constraints, add supported XDS.b ITI protocols
1.7	October 2016	Rhonda May, Kelly Llewellyn and Sue Merk	Revised C-CDA requirements and data submission methods. Added information on Direct messaging.
1.8	October 2016	Rhonda May	Edits, clarifications and corrections, Direct error messaging
1.9	January 2017	Sue Merk	Edits and updates
2.0	July 2017	Rhonda May	Insert Best Practices and add edits and updates
2.1	September 2017	Rhonda May	Patient matching edits and updates
2.2	January 2018	Rhonda May	Sponsor changes, minor edits and updates

2. INTRODUCTION

2.1 Overview

OneHealthPort offers Clinical Data Repository (CDR) services to organizations that are interested in collecting clinical information for a specific or "sponsored" population of patients. Current organizations sponsoring lives (Sponsors) and the patient lives being sponsored in the CDR are listed below. The CDR aggregates clinical data providing a patient-centric, longitudinal medical record inclusive of clinical records supplied by all contributing providers.

2.2 Clinical Data Repository Sponsors

- Washington State Health Care Authority - Apple Health Program (Medicaid population)

2.3 Scope

This implementation guide, unique to the **OneHealthPort CDR**, provides information for:

- C-CDA validation testing for format conformance with national standards
- Identifying patient lives for C-CDA data submissions
- Patient matching with the CDR
- C-CDA data submission options
- C-CDA confidentiality coding

The implementation guide is intended to **augment** the HL7 national standard implementation guide specifically for the operationalization of C-CDA document exchange on the OneHealthPort HIE as well as the IHE protocols for document sharing. OneHealthPort is using the **HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1** which is available on the HL7 website.

2.4 General Assumptions

- Organizations participating in the sponsored CDR initiatives are contracted with the OneHealthPort HIE.
- The OneHealthPort HIE provides the supporting technical infrastructure for C-CDA data submissions to the CDR.
- HIE participating organizations will successfully "pre-validate" C-CDA documents with validation testing tools provided or accepted by OneHealthPort, prior to submission to the HIE. (See section 3 below.)
- Organizations and vendors will develop and manage processes for identifying patients for C-CDA data submissions, error message handling and automation of submissions.
- Confidentiality of clinical information sent in C-CDA documents is the responsibility of the submitting organization, using the HL7 Basic Confidentiality Kind value set where N = Normal, R = Restricted, and V = Very Restricted.

2.5 Terms and Acronyms

Term or Acronym	Description or Additional Detail
CCD	Continuity of Care Document
C-CDA	Consolidated Clinical Data Architecture – a framework for electronic exchange of clinical documents
CDR	Clinical Data Repository – an OHP service providing a hosted database of specifically defined patient lives that are sponsored by organizations such as the State of Washington Health Care Authority (HCA). Data is segmented by sponsoring organization.
EHR	Electronic Health Record
HIE	Health Information Exchange
HL7	Health Level 7 – a healthcare standards setting organization having a defined set of international standards for transfer of clinical and administrative data between software applications used by various healthcare practitioners.
IHE	Integrating the Healthcare Enterprise - a non-profit organization based in the US state of Illinois. It sponsors an initiative by the healthcare industry to improve the way computer systems share information.
ITI-41	The IHE XDS.b standard message wrapper (ITI-41) for providing and registering documents in a repository
ITI-47	The IHE XDS.b standard message wrapper (ITI-47) for querying for patient identifiers based on patient demographic data
NIST	National Institute of Standards and Technology
PDQ	Patient Demographic Query
SSN	Social Security Number
XDS.b	IHE Cross Enterprise Document Sharing interoperability profile

3. C-CDA DOCUMENT VALIDATION

3.1 Overview

OneHealthPort HIE participating organizations exchanging C-CDA documents are required to perform validation testing to confirm messages conform to the National Institute of Standards and Technology (NIST) HL7 CDA_R2 standard. This validation is the **baseline requirement** for a file to successfully ingest and parse in the CDR. In addition to meeting formatting requirements all C-CDA xml files must be UTF-8 encoded for processing by the CDR.

3.2 C-CDA Document Validation Testing Options

OneHealthPort offers two options for validation testing:

- **Secure Environment Validation Testing** – OneHealthPort sponsors an instance of the HL7 CDA_R2 testing harness on the OneHealthPort HIE Application portal website that is available to HIE contracted organizations. Testers must obtain a OneHealthPort Single Sign-On account from their organization's SSO Administrator to access the secure testing harness. The validation tool can be accessed at this link: https://apps.onehealthport.com/OHPHIEApps . C-CDA files tested on the OneHealthPort validation tool are done so in a secure environment allowing use of actual patient files. Any data content and results from the testing harness are completely deleted after each file is tested.
- **National Institute of Standards and Technology (NIST)** - OneHealthPort is also accepting NIST validation of C-CDAs using the CDA_R2 . Organizations validating using the NIST validation tool should forward a screen shot of their successful validation results to the OneHealthPort HIE. The NIST validation tool can be accessed from this link: http://cda-validation.nist.gov/cda-validation/validation.html ***Note:*** Because the NIST is a public website, only test data files should be used with this validation testing harness.

Organizations testing C-CDA xml files using the validation testing tool receive an immediate response regarding the validity of the file structure. If the test result is invalid, errors in the construct of the file will be displayed. All errors must be cleared in order to obtain a "valid" test result. ***Note:*** The testing tool also provides warning messages that may improve the file content but are not critical structure errors.

4. PATIENT IDENTIFICATION FOR C-CDA DATA SUBMISSION

4.1 Overview

The OneHealthPort CDR accepts clinical data submissions for sponsored patient lives and does not accept C-CDA data submissions for patients not specified by a data Sponsor. Therefore, organizations participating in sponsored CDR initiatives will need to work with their EHR vendor to identify or flag patients for C-CDA data submissions based on identification information provided by the data Sponsor and send data only for those patients.

4.2 Sponsored Patient Identification Information

CDR Sponsors' information is posted on the OneHealthPort CDR website. Sponsors provide patient identification information to the CDR through eligibility uploads. Sponsors also identify specific information about the health plans under which sponsored patients are covered. Provider organizations contracted with and caring for patients covered under the health plan products on the sponsor's list must submit C-CDAs for these patients after an encounter. A Health Plan Product File is available at the OneHealthPort website on the Prepare the C-CDA page in the **CCDA Implementation Guide** section of the page.

5. PATIENT MATCHING AT THE CDR

5.1 Overview

Generally, C-CDAs submitted to the CDR are matched through a process of internal queries using one of the following:

- CDR global patient identifier **and** the CDR object identifier (OID), extension and root attributes respectively, in the patientRole id element or
- Sponsor's patient identifier **and** the sponsor OID, extension and root attributes respectively, in the patientRole id element with a corresponding match on the patient date of birth between what exists in the CDR and what is being submitted in the CCD, or
- Some providers collect and send patient social security numbers (SSN) in C-CDA documents. When a SSN is present with its corresponding object identifier **2.16.840.1.113883.4.1** in a CCD document, an internal query created at the CDR will search for a match on SSN, if the SSN is also reported in the eligibility information from Sponsors. This query also requires a corresponding match on the patient date of birth between what exists in the CDR and what is being submitted in the CCD.

- When none of the above are present, patient demographic information submitted in the C-CDA is used for patient matching by virtue of an internal query process triggered at the CDR. Patient matching relies on an EXACT MATCH on patient last and first name and date of birth. If data from the C-CDA is not an exact match with a known patient in the CDR, or if there is a match with more than one patient, the message is rejected and returned with a no patient match error.

5.2 Patient Matching Process

The patient matching processes supported by the CDR have varying degrees of "matching success" based on what is available from the sponsor compared to what the submitter has from the patient.

5.2.1 CDR Patient Global Identifier

Use of the patient CDR global identifier and OID is the best method to ensure that C-CDAs submitted to the CDR match against a known patient. The patient global identifier is assigned by the master person index in the CDR after receiving patient eligibility from the Sponsor. To use this identifier:

- Organization EHR systems would first need to query the CDR using a patient demographic query (PDQ or ITI47).
- The global patient identifier and the CDR object identifier (OID) are returned in the response.
- These identifiers can then be included in the C-CDA patient role section of the message header prior to submission to the CDR. Details for placement of the global patient identifier and CDR OID are presented below:

CDR Patient Global Identifier	
Sample of an "annotated" <patientRole> element using the CDR global identifier is as follows: <patientRole> <id extension="123456" root="1.3.6.1.4.1.38630.3"/> <id extension="9867543210" root="1.3.6.1.4.1.38630.2.1.1.117"/>	• If the provider organization doesn't have the sponsor's patient identifier, then a PDQ can be used to obtain the patient global identifier from the CDR • Patient identifiers provided in the PDQ response will be the CDR global identifier and corresponding OID, and the Sponsor patient identifier and corresponding OID. • The OID corresponding to the global identifier is 1.3.6.1.4.1.38630.3 and will show with the OHP-MPI assigning authority in the PDQ response. • The actual line in the PDQ response will show as follows: **<id root="1.3.6.1.4.1.38630.3.99.1.2.1.1.2" extension="123456" assigningAuthorityName="OHP-MPI"/>** • The yellow highlighted section shown above should be omitted when inserting the OID in the patientRole/id element in the CCD submission. • A second patientRole/id element is required to identify the submitting organization. Typically this will have the sending organization's unique patient identifier (such as MRN) and the OneHealthPort HIE assigned OID for the organization or an alternate OID that has been reported to OneHealthPort for mapping purposes in the CDR.

5.2.2 CDR Sponsor Patient Identifier

Use of the Sponsor patient identifier is the next best method to ensure that C-CDAs submitted to the CDR match against a known patient. The Sponsor patient identifier is assigned by the Sponsor and reported in an eligibility feed sent to the CDR. To use this identifier:

- The Sponsor patient identifier and the CDR Sponsor object identifier (OID) must be known by the submitting organization.
    - The sponsor patient identifier can be identified using the PDQ query (ITI47)
    - Some organizations collect and store the sponsor patient identifiers in their information systems.
    - The **Washington State Health Care Authority** patient identifier is also known as the ProviderOne or P1 number and is available on the patient's Medicaid card.
        - The P1 number is in a format like 123456789WA and the corresponding HCA OID to use with the P1 number is 1.3.6.1.4.1.38630.3.1
- These identifiers can then be included in the C-CDA patient role section of the message header prior to submission to the CDR. Details for placement of the Sponsor patient identifier and Sponsor OID are presented below:

CDR Sponsor Patient Identifier	
Sample of an "annotated" <patientRole> element using the Sponsor and the sponsor's patient identifier is as follows: <patientRole> <id extension="123456789WA" root="1.3.6.1.4.1.38630.3.1"/> <id extension="9867543210" root="1.3.6.1.4.1.38630.2.1.1.117"/>	• If the provider organization knows the Sponsor's patient identifier, then this identifier and the Sponsor CDR object identifier (OID) can be used in the C-CDA • Sponsor patient identifier is inserted in the patient role id extension attribute section of the CCD. The corresponding OID is inserted in the root attribute. • If the Sponsor patient identifier is acquired through the PDQ, the actual line in the PDQ response will show as follows: **<id root="1.3.6.1.4.1.38630.3.1.99.1.2.1.1.2" extension="123456789WA" assigningAuthorityName="OHP_HCA_SNS"/>** • The yellow highlighted section shown above should be omitted when inserting the OID in the patientRole/id element in the CCD submission. • A second patientRole/id element is required to identify the submitting organization. Typically this will have the sending organization's unique patient identifier (such as MRN) and the OneHealthPort HIE assigned OID for the organization or an alternate OID that has been reported to OneHealthPort for mapping purposes in the CDR. • The initial query generated with the identifier returns the date of birth existing in the CDR for that patient identifier. Prior to making the match, the date of birth in the response to the internal query is compared with the date of birth on the inbound CCD. If there is a match with the identifier and the date of birth, the CCD will be processed to the patient. If not, a secondary query will run. • The secondary search will be executed using exact match on patient last name, first name and date of birth from the CCD submission.

5.2.3 Patient Social Security Number Matching

Some organizations collect, store and include patient social security numbers in their CCD submissions. The system will run an internal query to find the patient using the social security number in the following circumstances:

- The CDR Global Identifier is not present in the CCD
- The Sponsor Patient Identifiers is not present in the CCD or the system does not find a match if it is present

- The Patient Social Security Number is present in the CCD
  - The patient social security identifier format is 999999999, and the corresponding Social Security Number OID to use with the SSN is 2.16.840.1.113883.4.1.
    - Logic has been added at the CDR to strip dashes if the SSN included in the CCD has the format 999-99-9999.

Patient Social Security Identifier	
Sample of an "annotated" <patientRole> element using the patient's social security identifier is as follows: <patientRole> <id extension="999999999" root="2.16.840.1.113883.4.1"/> <id extension="9867543210" root="1.3.6.1.4.1.38630.2.1.1.117"/>	• If the provider organization knows the patient's social security number, then this identifier and the SSN object identifier (OID) can be used in the C-CDA • Patient SSN is inserted in the patient role id extension attribute section of the CCD. The corresponding OID is inserted in the root attribute. • A second patientRole/id element is required to identify the submitting organization. Typically this will have the sending organization's unique patient identifier (such as MRN) and the OneHealthPort HIE assigned OID for the organization or an alternate OID that has been reported to OneHealthPort for mapping purposes in the CDR. • The initial query generated with the SSN returns the date of birth existing in the CDR for that patient identifier. Prior to making the match, the date of birth in the response to the internal query is compared with the date of birth on the inbound CCD. If there is a match with the SSN and the date of birth, the CCD will be processed to the patient. If not, a secondary query will run. • If the internal query process used at the CDR cannot find a match based on the Patient Social Security Number, a secondary search will be executed using exact match on patient last name, first name and date of birth from the CCD submission

5.2.4 Patient Demographic Matching

Patient demographic matching at the CDR uses specific fields contained in the C-CDA. Organizations are encouraged to verify that patient demographic information collected and stored in the EHR at the time a patient presents for care is accurate and matches the Sponsors eligibility information. The demographic fields in the C-CDA used for patient matching are:

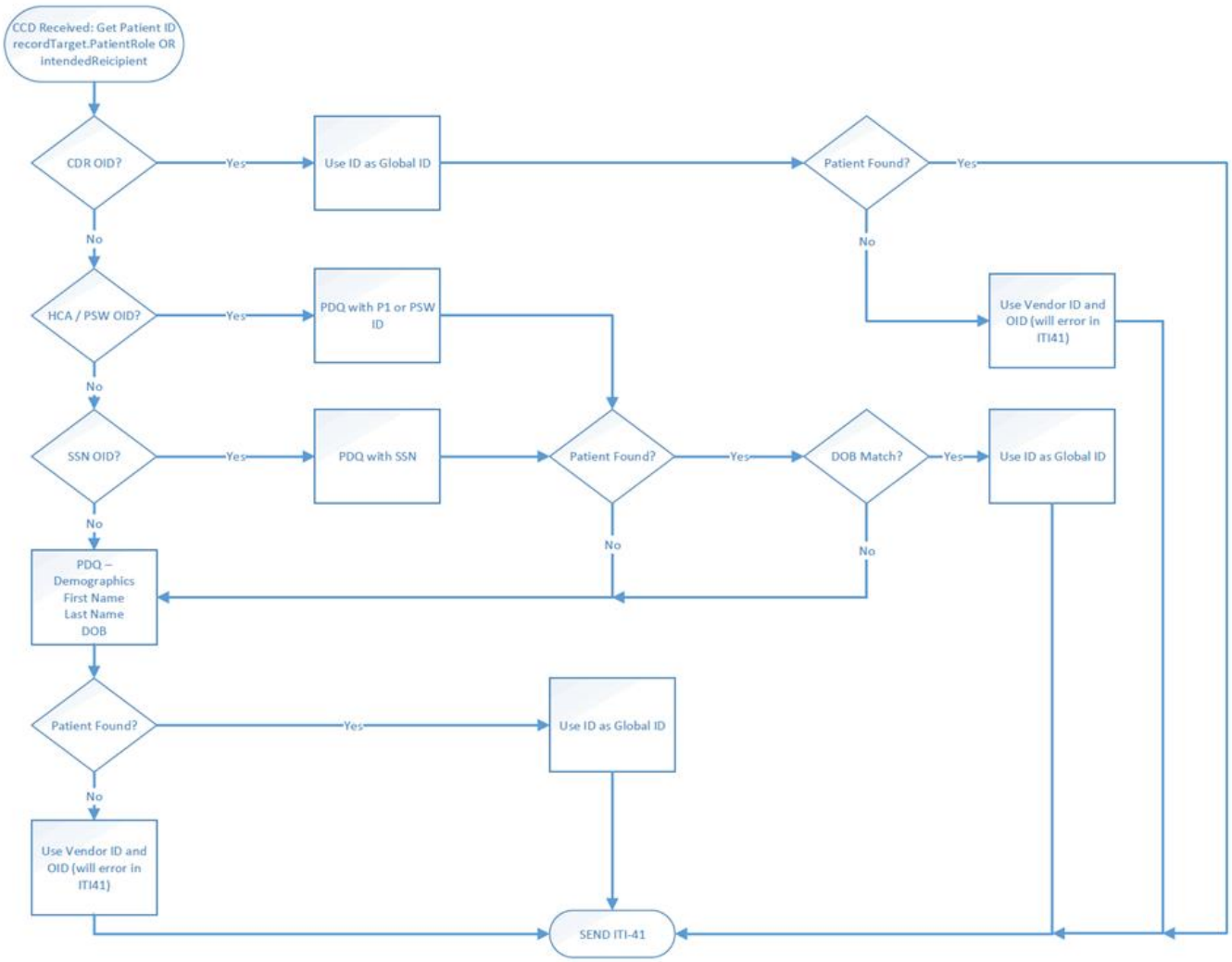
- First Name (required)
- Last Name (required)
- Date of Birth (required)

When a C-CDA is received without the CDR, Sponsor, or Social Security Number identifiers, the CDR will launch an internal query to find a patient match based on patient demographic data.

- If an exact match is found, the patient global identifier and CDR OID will be inserted into the C-CDA and processed by the CDR.
- If an exact match is not found, or if multiple matches are found, then the CDR will send back an error to the submitting organization and the organization will need to investigate the reason for no patient match.

The Patient Demographic Matching process is also executed when C-CDAs submitted with Sponsor identifiers or SSNs cannot be matched.

5.2.3 Patient Matching Process Flow Diagram



5.3 Using the PDQ (ITI-47)

Organizations that do not have known patient identifiers are encouraged to use the PDQ *before* submission of C-CDAs to the CDR. PDQs sent to the CDR from the EHR system receive a response with exact patient match information for insertion into the C-CDA (and storage in the EHR if set up to do so). In the event there are multiple matches, the CDR will return a list of possible matches, with the patient global identifiers, to select from, allowing the organization to identify the correct patient and use of the appropriate identifiers. Note: Patient Social Security Numbers are **NOT** returned in the response to the PDQ. The Global ID, Sponsor ID and all stored demographics are returned with a successful match.

6. C-CDA DATA SUBMISSION OPTIONS

6.1 Overview

C-CDA submissions are required following a patient encounter. Organizations are encouraged to submit C-CDAs within a reasonable time period following the patient visit, when the C-CDA is deemed complete in the EHR and ready for submission.

OneHealthPort supports four different C-CDA data submission pathways to the CDR. The options below can be used to support the submission of validated C-CDA messages using existing functionality available in electronic health record (EHR) systems. Organizations can work with their vendors to use the option that best supports their system data submissions capabilities and operational processes.

6.1.1 ITI-41 XDS.b Web Services Transaction Using Certificate-Based Exchange

Organizations will be required to provide certificates to establish secure connectivity to the OneHealthPort HIE as well as a URL that will be available for the HIE to send message disposition notifications (MDNs) and error processing messages from the CDR back to the organization. Certificate requirements and endpoint URLs are provided in the Web Services Implementation Guide. (See the Web Services Implementation Guide for full details)

6.1.2 Direct Message

Organizations choosing this data submission option will be required to send the C-CDA in a validated xml format to the CDR's Direct Mail address. (See the Direct Message Implementation Guide for full details)

6.1.3 C-CDA xml File Submission Using AS2 Connectivity

Organizations already connected to and exchanging data through the OneHealthPort HIE currently use an AS2 connectivity software tool provided by the HIE or support the AS2 connectivity to the HIE using their own tool suite. If C-CDA xml files can be exported from the EHR system, organizations can use existing connectivity and message delivery management tools to support delivery of the C-CDA files to the CDR.

6.1.4 ITI-41 XDS.b File Submission Using AS2 Connectivity

Organizations already connected to and exchanging data through the OneHealthPort HIE currently use an AS2 connectivity software tool provided by the HIE or support the AS2 connectivity to the HIE using their own tool suite. If the EHR system is set up to export a C-CDA using the ITI-41 XDS.b protocol *and* the organization prefers not to set up another connectivity using certificate-based exchange, the organization may use the existing AS2 connectivity, provided a fully compliant and complete ITI-41 XDS.b document can be exported from the EHR and transferred to the AS2 connectivity tool for submission.

7. CORRECTION OF C-CDA DATA SUBMISSIONS

7.1 Overview

Organizations may need to periodically update, append or replace previously submitted C-CDAs.

7.2 C-CDA Submission Correction and Updates

The HL7 C-CDA standard provides for correction and updates through relatedDocument functionality. Organizations sending appended or replacement C-CDA documents must include an additional section in the C-CDA message header. The location in the header for the relatedDocument information is after the documentationOf section, and is shown below:

relatedDocument	0..*	MAY	1098-29893	
@typeCode	1..1	SHALL	1098-31889	2.16.840.1.113883.11.20.9.62 (Related Document (append/replace))
parentDocument	1..1	SHALL	1098-29894	

Source: CDAR2_IG_CCDA_CLINNOTES_R2_D1_2014NOV_V2_Templates_and_Supporting_Material

Organizations submitting replacement or appended C-CDAs must take one of 2 courses:

1. Identify the unique document identifier sent in the originally submitted CCD <id> root and extension attributes and send that information relative to the parentDocument as shown below

2. Perform a registry stored-query (ITI-18) to obtain the unique document identifier submitted in the original CCD. That identifier must be used as the parentDocument id element. An example of the relatedDocument section is show below:

```
<relatedDocument typeCode="RPLC">
<parentDocument>
<id root="aefe4f6a-d6e1-46ef-8c40-790998f7bee6" />
<code code="34133-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="SUMMARIZATION OF EPISODE NOTE"/>
```

8. C-CDA CONFIDENTIALITY CODES

8.1 Overview

Data confidentiality codes assigned to clinical documents **drive all access control** to individual patient records in the Clinical Data Repository. It is the responsibility of the submitting organization to code the content in the C-CDA based upon the type of content in an encounter, or the patient request for data to be treated with sensitivity.

8.2 Data Confidentiality Codes

Currently, the entire C-CDA has only one **confidentiality code** that **should be based on the most confidential element in the document**. In the future, confidentiality coding will be accepted at the element level. Further information regarding the HL7 standard discussing confidentiality code assignment can be found by an internet search using the confidentiality code system object identifier 2.16.840.1.113883.5.25. The HL7 link is as follows: http://www.hl7.org/documentcenter/public_temp_2873DC00-1C23-BA17-0C63F6C676FED8DB/standards/vocabulary/vocabulary_tables/infrastructure/vocabulary/vs_Confidentiality.html

Electronic Health Record (EHR) systems must provide the means for the practitioner to identify the correct confidentiality code for information included in the C-CDA. "Normal" (N) may be the system default for data confidentiality. The EHR system must provide functionality to adjust the confidentiality code to match the information in the record.

The State of Washington Health Care Authority has developed a reference guide for Confidentiality code assignment based on ICD-10 and CPT-4 Codes associated with the record. This guide can assist vendors and practices with examples for how to classify data.

Currently the C-CDA accommodates the HL7 Basic Confidentiality Kind. In the future the standard may add a "sensitivity" classification providing more discreet definition of particular data/information in a record. A table of the confidentiality codes and their definition is shown below:

Code	Description	Definition
N	Normal	Privacy metadata indicating that **the information is typical, non-stigmatizing health information, which presents typical risk of harm** if disclosed without authorization. Includes what HIPAA identifies as the minimum necessary protected health information (PHI) given a covered purpose of use (treatment, payment, or operations). Includes typical, non-stigmatizing health information disclosed in an application for health, workers compensation, disability, or life insurance.
R	Restricted	Privacy metadata indicating **highly sensitive, potentially stigmatizing information, which presents a high risk to the information subject if disclosed without authorization**. May be preempted by jurisdictional law, e.g., for public health reporting or emergency treatment.

		Includes information that is additionally protected such as sensitive conditions mental health, HIV, substance abuse, domestic violence, child abuse, genetic disease, and reproductive health; or sensitive demographic information such as a patient's standing as an employee or a celebrity. May be used to indicate proprietary or classified information that is not related to an individual, secret ingredient in a therapeutic substance, or the name of a manufacturer.
V	Very Restricted	Privacy metadata indicating that the **information is extremely sensitive and likely stigmatizing health information that presents a very high risk if disclosed** without authorization. This information must be kept in the highest confidence. Includes information about a victim of abuse, patient requested information sensitivity, and taboo subjects relating to health status that must be discussed with the patient by an attending provider before sharing with the patient. May also include information held under legal lock or attorney-client privilege

Source: http://hl7.org/fhir/v3/Confidentiality/index.html

9. C-CDA DOCUMENT RENDERING AND PARSING IN THE CDR

Overview

When a document successfully uploads in the CDR, the entire document will render. Currently, the components of the CDR that will parse with discrete data, if all appropriate formatting/coding is included in the submitted document, are as follows:

- Documents – a listing of all the documents in the system for a given patient
- Medications
- Vital Signs
- Immunizations
- Problems
- Allergies
- Procedures
- Results

Sample screen shots of a rendered document:

Summary of Care: 9/29/03 - 9/28/16

Created On: September 28, 2016

Patient: Able Baker , , **MRN:** 111222333TP

Birthdate: September 15, 2015 **Sex:** Male

Table of Contents

Encounter

[redacted] **Date(s): 9/29/03** [redacted] Attending Physician: [redacted] MDAttending Physician: [redacted] Attending Physician: Test, MD301, MDAdmitting Physician: Test, MD300, MDReferring Physician: [redacted]

Vital Signs

Most recent to oldest [Reference Range]:	1
Respiratory Rate [15-25 br/min]	45 br/min *H*(7/21/13 8:05 AM)
SpO2 [85 %]	98 % (7/21/13 8:05 AM)
Systolic Blood Pressure [88-121 mmHg]	90 mmHg (7/21/13 8:05 AM)
Diastolic Blood Pressure [60-81 mmHg]	60 mmHg (7/21/13 8:05 AM)
Pulse Rate [60-130 bpm]	120 bpm (7/21/13 8:05 AM)
Head Circumference	36.00 cm (7/2/04 3:01 PM)
Height/Length Measured	130 cm (4/1/15 5:52 AM)
Temperature Axillary	38 DegC (7/21/13 6:08 AM)
Temperature Oral	37 DegC (11/4/15 3:00 PM)
Temperature Rectal	38.2 DegC (7/21/13 8:05 AM)
Temperature Skin	38 DegC (7/21/13 6:08 AM)
Weight Measured	42 kg (7/27/15 2:42 PM)

Problem List

Condition	Effective Dates	Status	Health Status	Informant
Kawasaki disease(Confirmed)		Active		
Acute febrile mucocutaneous lymph node syndrome(Confirmed)		Resolved		
Adolescent idiopathic scoliosis(Confirmed)		Active		
Asthma(Probable Diagnosis)		Active		
At risk for autonomic dysreflexia(Confirmed)		Active		
Autonomic dysreflexia(Confirmed)		Active		
Axis III -FAS(Confirmed)(Stable)		Active		
Hypertensive heart and CKD, ESRD on dialysis(Confirmed)		Active		
Benign hypertension with CKD (chronic kidney disease) stage V(Confirmed)		Resolved		
Chronic kidney disease (CKD), stage V(Confirmed)		Active		
Cochlear prosthesis in situ(Confirmed)		Active		
CF (cystic fibrosis)(Confirmed)		Active		
Cystic fibrosis, pancreatic(Confirmed)		Active		
Cystic fibrosis related bronchopneumonia(Confirmed)		Active		
Cystic fibrosis with gastrointestinal manifestations(Confirmed)		Active		
Cystic fibrosis with meconium ileus(Confirmed)		Active		

Cystic fibrosis without meconium ileus(Confirmed)		Active		
ESRD on hemodialysis(Confirmed)		Active		
Dependence on peritoneal dialysis(Confirmed)		Inactive		
Double outlet right ventricle(Confirmed)		Active		
Drug therapy finding(Probable Diagnosis)		Active		
End-stage renal disease (ESRD) (Confirmed)		Active		
ESRD (end stage renal disease) on dialysis(Confirmed)		Active		
Difficult intubation(Confirmed)		Active		
Fanconi syndrome(Confirmed)		Active		
H/O: anticoagulant therapy(Confirmed)		Active		
H/O: Disorder(Probable Diagnosis)		Active		
Hb SS disease(Probable Diagnosis)		Active		
Hyperaldosteronism(Probable Diagnosis)		Active		
Benign hypertensive heart and kidney disease and CKD stage V(Confirmed)		Active		
Hypertensive kidney disease, stage 5 or ESRD(Confirmed)		Active		
Hypertensive CKD, ESRD on dialysis(Confirmed)		Active		
Jonny doesn't feel good. (Confirmed)		Active		
Malignant hypertensive CKD w ESRD on dialysis(Confirmed)		Active		
Pain in elbow(Confirmed)		Active		
Difficult airway for intubation(Confirmed)		Active		
Difficult airway(Confirmed)		Active		
Secondary diabetes mellitus(Confirmed)		Active		
Spine at Risk(Confirmed)[1]		Active		

[1]Problem added due to documentation of Spine at Risk precautions by Butler, Matthew C

Allergies, Adverse Reactions, Alerts

Substance	Reaction	Severity	Status
Allergy to peanuts		Severe	Active
amoxicillin		Mild	Active
aspirin		Mild	Active
contrast media (iodine-based)		Mild	Active
corticosteroids[1]	At high risk of tumor lysis syndrome	Severe	Active
oxyCODONE[2]	Apnea, drug induced	Severe	Active
penicillin	Rash	Severe	Active
penicillins		Mild	Active
shellfish	Rash	Severe	Active
Soy		Severe	Active

[1]Corticosteroids are contraindicated due to risk of interference with cancer treatment plan and risk of tumor lysis syndrome

[2]history of phrenic palsy; opioids induce hypoventilation/apnea

Medications

acetaminophen 160 mg/5 ml oral liquid20 - 25 kg --- 192 mg = 6 mL PO Q 4 hrs PRN pain, Dispense: 180 mL, Start date/time: 10/23/15 14:09:38, Substitution Permitted, Do Not RouteStart Date: 10/23/15Stop Date: 10/28/15Status: Ordered

aspirinStart date/time: 02/24/16 7:50:00, Substitution PermittedStart Date: 2/24/16Stop Date: 2/23/17Status: Ordered

aspirin40.5 mg PO once a day, routine, Start date/time 02/24/16 9:00:00Start Date: 2/24/16Stop Date: 6/3/16Status: Ordered

aspirinStart date/time: 06/15/15 8:45:00, Substitution PermittedStart Date: 6/15/15Stop Date: 6/14/16Status: Ordered

cephalexin 250 mg oral capsule Start date/time: 07/31/15 9:02:00, Substitution PermittedStart Date: 7/31/15Stop Date: 7/30/16Status: Ordered

D5 1/2NS + potassium chloride 10 mEq/L 1000 mLIV to run at 100 mL/hr, routine, Start date/time 02/24/16 7:44:00Start Date: 2/24/16Stop Date: 6/3/16Status: Ordered

ibuprofen 400 mg oral tablet> 40 kg --- 400 mg = 1 tablet(s) PO Q 6 hrs PRN pain, Take with food, Dispense: 30 tablet(s), Start date/time: 03/17/13 8:36:00, Substitution PermittedStart Date: 3/17/13Stop Date: 4/15/14Status: Ordered

multivitaminStart date/time: 02/03/12 14:54:00, Substitution PermittedStart Date: 2/3/12Status: Ordered

Results

Chemistry

Most recent to oldest [Reference Range]:	1	2	3
Glucose Level, Point of Care [60-105 mg/dL]	164 mg/dL [1]*H*(10/15/13 2:53 PM)	57 mg/dL [2]*L*(10/15/13 11:55 AM)	198 mg/dL [3]*H*(10/15/13 10:23 AM)

[1]Result Comment: Confirmation To Lab

[2]Result Comment: 2 hour postprandial~Notified MD

[3]Result Comment: Notified MD

Coagulation

Most recent to oldest [Reference Range]:	1	2	3
Activated Clotting Time [101-167 second(s)]	131 second(s) (10/15/13 3:38 PM)	102 second(s) (10/15/13 2:50 PM)	321 second(s) *H*(10/15/13 2:43 PM)
Circuit Activating Clotting Time	>500 second(s) *NA*(10/15/13 2:18 PM)	126 second(s) *NA*(10/15/13 2:15 PM)	<50 second(s) [1]*NA*(10/15/13 1:53 PM)

[1]Result Comment: PATIENT SAMPLE

Immunizations

Given and Recorded

Vaccine	Date	Status	Refusal Reason
cholera vaccine[1]	12/11/13	Given	
influenza virus vaccine, live[2]	10/17/13	Given	
influenza virus vaccine, live[3]	9/14/12	Given	
influenza virus vaccine, inactivated[4]	10/17/13	Given	
influenza virus vaccine, inactivated	12/19/08	Given	
influenza virus vaccine, inactivated[5]	12/19/08	Given	
influenza virus vaccine, inactivated	12/10/08	Given	
influenza virus vaccine, inactivated	11/13/08	Given	
influenza virus vaccine, inactivated	11/13/08	Given	
influenza virus vaccine, inactivated[6]	10/16/07	Given	
influenza virus vaccine, inactivated[7]	10/17/06	Given	
influenza virus vaccine, inactivated[8]	10/17/06	Given	
hepatitis B pediatric vaccine[9]	2/22/11	Given	
hepatitis B adult vaccine[10]	2/22/11	Given	
hepatitis B adult vaccine[11]	2/22/11	Given	
hepatitis B vaccine	9/24/08	Given	
haemophilus b conjugate (PRP-T) vaccine	8/13/08	Given	
haemophilus b conjugate (PRP-T) vaccine	8/11/08	Given	
meningococcal conjugate vaccine	7/20/06	Given	
meningococcal conjugate vaccine	7/20/06	Given	
meningococcal conjugate vaccine[12]	7/20/06	Given	
meningococcal conjugate vaccine[13]	7/20/06	Given	
pneumococcal 7-valent vaccine	6/9/06	Given	
pneumococcal 7-valent vaccine	6/9/06	Given	
diphth/haemoph/pertussis,acel/tetanus	6/23/04	Given	
measles mumps rubella (MMR) vaccine	6/4/04	Given	

[1]Admin Note: given at outside

[2]Admin Note: also given at outside facility

[3]Result Comment: data entry error

[4]Admin Note: just a note given elsewhere

[5]Result Comment: test

[6]Result Comment: Gave VIS

[7]Admin Note: given on 10/17

[8]Admin Note: administered

[9]Result Comment: test

[10]Result Comment: test

[11]Result Comment: test

[12]Admin Note: 7/20/06 vis given

[13]Admin Note: TEST 7/20/06

Procedures

Procedure	Date	Related Diagnosis	Body Site
Esophagogastric fundoplasty (eg, Nissen, Belsey IV, Hill procedures)[1]	9/6/06		
PICC line placement at bedside[2]	9/6/06		
Anesthesia for procedures on male genitalia (including open urethral procedures); undescended testis, unilateral or bilateral.			

[1]Patient tolerated procedure well.

[2]Patient tolerated procedure well. Chest x-ray confirmed placement. MD states OK to use.

Social History

No data available for this section

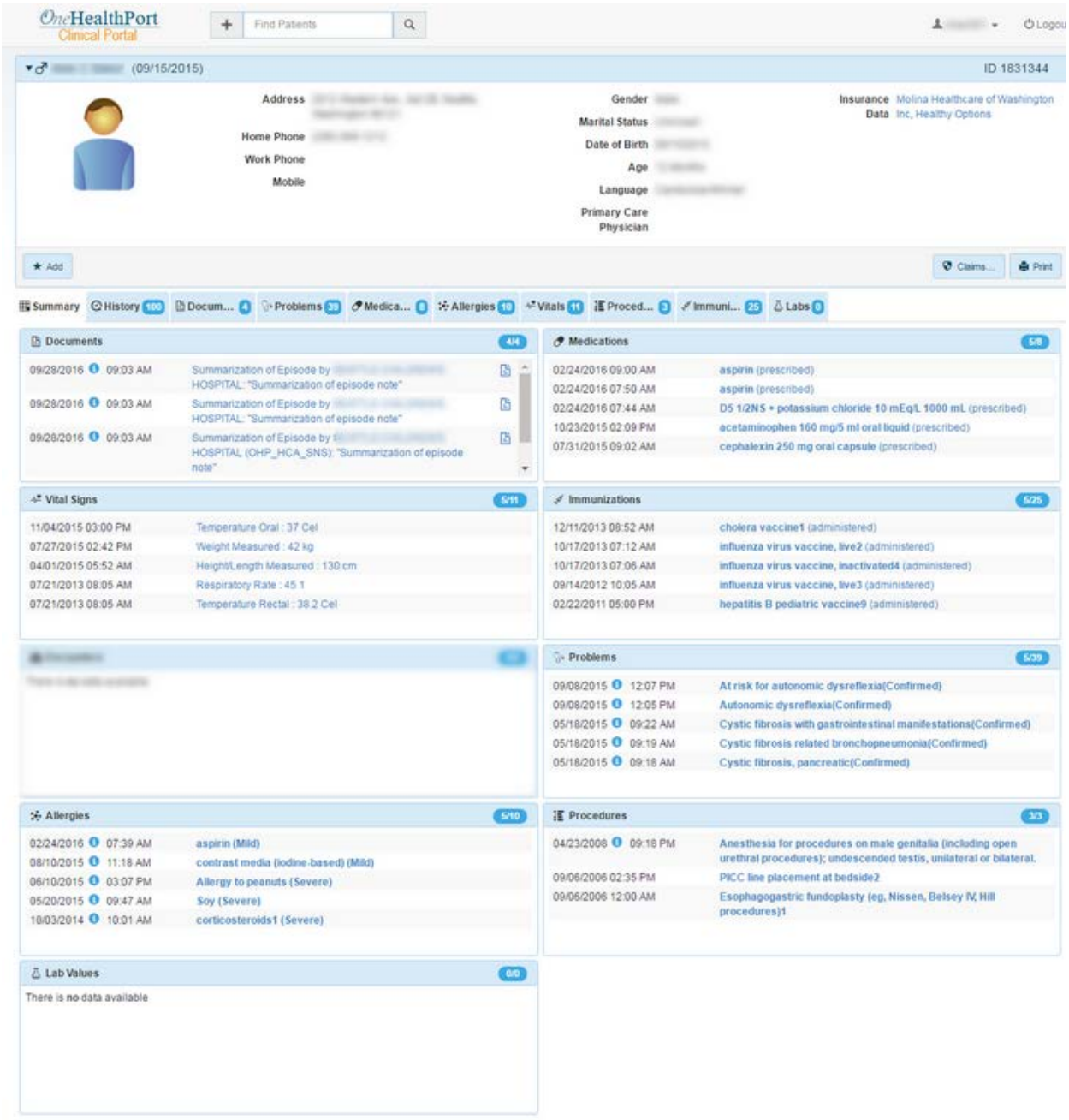
Functional Status

No data available for this section

Assessment and Plan

Future Appointments

Sample screen shot of parsed data:



10. IHE DATA SUBMISSION PROTOCOLS SUPPORTED BY THE ONEHEALTHPORT HIE

10.1 Overview

The OneHealthPort HIE supports several web service transactions using IHE protocols that can be leveraged and used for supporting information exchange activity with the CDR. For detailed information on the web services transactions see the Web Services Implementation Guide on the OneHealthPort website, Prepare the C-CDA page in the **Connecting for C-CDA Document Submission** section of the page.

10.2 Supported Submission Protocols

See the OneHealthPort Web Services Implementation Guide document for specific details on the web service transaction requirements. Currently supported and planned web service transactions include the following:

- ITI-41NS Non-standard Provide and Register Document Set – used with customers wanting to do web service transaction processing but unable to match the specific ITI41 requirements for the Clinical Data Repository.
- ITI-41 Provide and Register Document Set and ITI-41MTOM Provide and Register Document Set – used with customers able to match the specific ITI41 requirements for the Clinical Data Repository and/or wanting to do web service transaction processing with a multi-part message format. Have the following additional specific prerequisites:
    - Sending organization must first process an ITI47 to obtain known patient identifiers in the CDR, for sponsored lives in the CDR.
    - Sending organization must choose the CDR global identifier from the patient identifiers listed in the PDQ response to include in their ITI41
    - ITI41 message must be properly formatted and contain all the components required by the CDR for processing
    - OHP assigned OIDs for the submitting organization must be included in the required metadata fields in the ITI41 submission.
    - Sending organization must only include a single patient for each submission (post).
- ITI-47 PDQv3 Patient Demographic Query – Query (PRPA_IN201305UV02) and Response (PRPA_IN201306UV02) for patient identifiers from the CDR
- ITI-18 Registry Stored Query for documents stored in the CDR
- ITI-43 Retrieve Document Set (**coming soon**)
- ITI-55 Cross Gateway Query for patient identifiers] (**coming soon**)
- ITI-38 Cross Gateway Query for patient specific document identifiers stored in the CDR] (**coming soon**)
- ITI-39 Cross Gateway Query for specific CDR documents (**coming soon**)

11. BEST PRACTICES FOR CCDA SUBMISSIONS

11.1 Overview

OneHealthPort is offering the following recommendations as best practices for organizations submitting C-CDA documents to the clinical repository. This section of the guide will be updated periodically with additional experience and as new information becomes known.

- Submit encounter-based CCD for the current visit/procedure being reported.
- If an initial historical submission is a system requirement, please limit it to 6 months of history. If possible, do not submit history on every encounter for a patient.
- If more than one submission is made on the same encounter, subsequent submissions should use the “Append” or “Replace” convention of the XDS.b standard so that the patient record does not end up with multiple near-identical entries for the same patient in the same day or a few days span. A single document for a single encounter is preferred.

- If a patient has more than one encounter in the same organization in the same day, a single CCD for all activities is preferred. Holding the encounter for results and final sign-off of the encounter is preferred over multiple reports in the same day.