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# CMS QRDA Submission Errors Eligible Professionals

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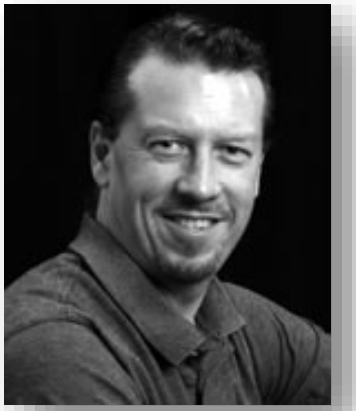
# Presenter Biography

## Rick Geimer



- Chief Technology Officer, Lantana Consulting Group
- Co-chair, HL7 Structured Document Working Group
- HL7 CDA R2 Certified Specialist
- Co-editor of Consolidated CDA and other specifications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# Agenda

- Overview of CMS Submission Requirements
- Common CMS QRDA Submission Errors
- Pre-Submission QRDA Debugging Approaches


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# Overview of CMS Submission Requirements

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# Requirements for Eligible Professionals

- Number of measures and domains
  - Report on 9 Clinical Quality Measures (CQMs)
  - Report for at least 3 different domains.
- Amount of data to submit
  - A full year (Jan – Dec) to qualify for the Medicare EHR Incentive Program and PQRS.
- Submission formats
  - For EHR incentive programs, report electronically via the PQRS Portal using QRDA III.
  - For PQRS Reporting, report electronically via the PQRS Portal using QRDA I or QRDA III.
- Group reporting options are also available using the PQRS GPRO web interface.


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# Common CMS QRDA Submission Errors

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# Error Categories Discussed in this Presentation

This presentation addresses errors in the following categories:

- CDA XML Schema
- Identifiers
- Addresses
- Template IDs
- Terminology


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# Process Overview

For each category:

- List common error messages
  - Note that the message text can change over time, so the wording may not exactly match what you see.
- Give one or more examples of an error from that category in XML
- Walk through potential solutions to the problem.


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# CDA XML Schema Errors

- Error Message
  - The CMS EHR QRDA Report SHALL conform to the CDA R2 standard.
- Error Meaning
  - The submitted document is either not an XML file, or is an XML file but does not conform to the XML Schema provided by HL7 with the QRDA specification.


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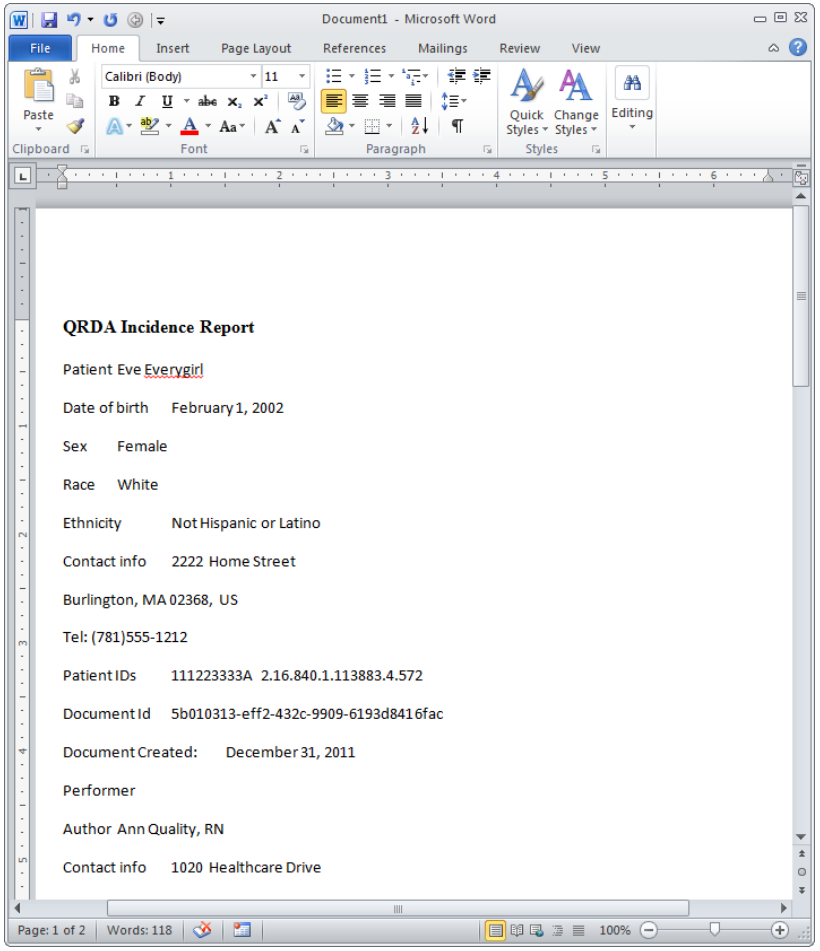
# CDA XML Schema Error Example

It is not legal to submit an MS Word document, HTML, PDF, or a QRDA that does not comply with the CDA_SDTC.xsd schema.





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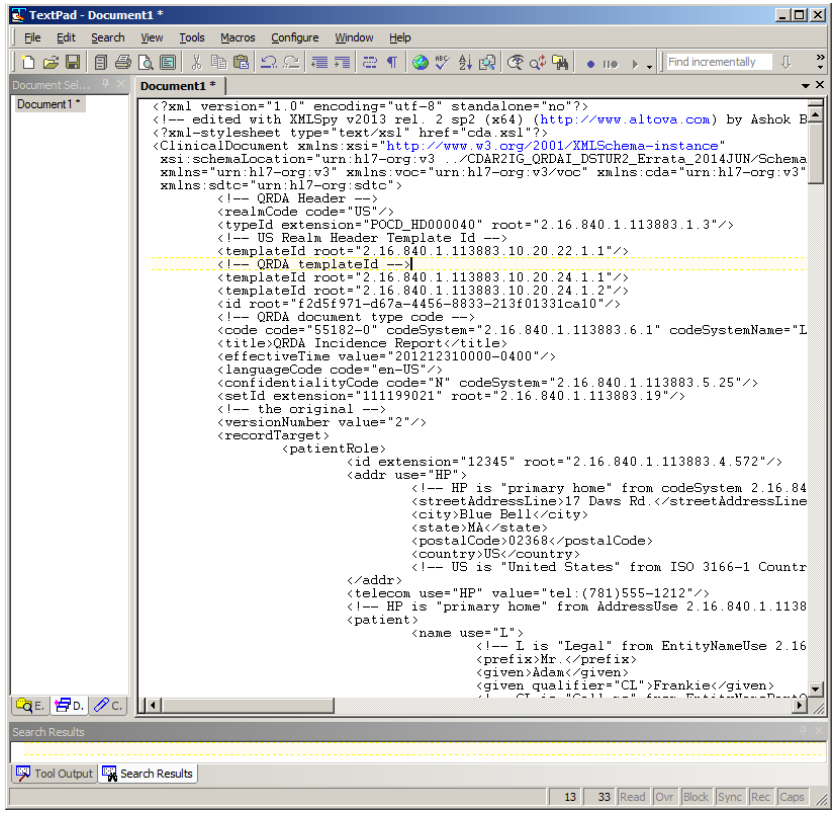
# CDA XML Schema Error Correction

Submit a valid QRDA XML file.

The last portion of this presentation describes how to validate against the QRDA schemas before submission.





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# Date/Time Errors

- Error Messages
  - If the results section is present, the 'effectiveTime' element SHALL be the time stamp of the following format YYYYMMDDHHMMSS.
  - The serviceEvent 'effectiveTime' (start date) element SHALL be prior to or the same as the serviceEvent 'effectiveTime' (end date).
  - The serviceEvent 'effectiveTime' (start date and end date) elements SHALL be at least precise to the day (YYYYMMDD).
- Error Meaning
  - Times must be in the form YYYYMMDDhhmmss+ZZZZ, where +ZZZZ is the UTC offset and can be either positive or negative (i.e. can be +0500, -0700, etc.). Most times need to be accurate to at least the day. The UTC offset is not absolutely required, but should be provided for any timestamps that are more precise than the day (i.e. precise to the hour or second)
  - The start times (<low>) must be earlier than the end time (<high>).


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# Date/Time Error Examples

The example to the right shows two invalid service event times.

- Start time is in the wrong format.
- End time is present, but is precise only to the year.

```
<documentationOf typeCode="DOC">
  <serviceEvent classCode="PCPR">
    <effectiveTime>
      <low value="2014-02-28"/>
      <high value="2014"/>
    </effectiveTime>
    ...
  </serviceEvent>
</documentationOf>
```


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# Date/Time Error Partial Correction

The example to the right is still incorrect.

- Start and end times now both have valid times in the correct format, but the start time is after the end time.

```
<documentationOf typeCode="DOC">
  <serviceEvent classCode="PCPR">
    <effectiveTime>
      <low value="20140228"/>
      <high value="20140227"/>
    </effectiveTime>
    ...
  </serviceEvent>
</documentationOf>
```


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# Date/Time Error Correction

The example to the right shows two corrected dates.

- Both times are in the correct format.
- Both times are precise to the day.
- Start time is before the end time.

```
<documentationOf typeCode="DOC">
  <serviceEvent classCode="PCPR">
    <effectiveTime>
      <low value="20140227"/>
      <high value="20140228"/>
    </effectiveTime>
    ...
  </serviceEvent>
</documentationOf>
```


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# Identifier Errors

- Error Messages
  - If participant/participantRole/id@root is 2.16.840.1.113883.4.572, the id@extension SHALL be a valid HIC number format.
  - For participant/participantRole/id, HIC Number SHALL be submitted and id/@root SHALL be 2.16.840.1.113883.4.572.
  - The patient's provider's organization's id 'extension' attribute value SHALL be present as the provider's TIN (nine-digit value in XXXXXXXXX format).
  - The serviceEvent performer's assignedEntity id 'extension' attribute value SHALL be present as the provider's NPI…
- Error Meaning
  - The identifiers (IDs) in the document must conform to specific rules regarding which IDs are allowed in which locations, what values go into the root (typically a scoping OID) and extension (the ID itself) attributes, and some ID types have further syntax restrictions.


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# Identifier Error Examples

The example to the right shows two patient ID errors.

- The id element is missing entirely under patientRole.
- The id element is present in a valid QRDA location, but the CMS guide requires the Health Insurance Claim (HIC) number or patient ID to be under patientRole, not patient. Also, the wrong HIC root OID is used.

```
<recordTarget>
  <patientRole>
  <addr use="HP">...</addr>
    ...
    <patient>
      <id extension="12345“
          root=" 2.16.840.1.113883.3.249.13"/>
      <name use="L">...</name>
      ...
    </patient>
    ...
  </patientRole>
</recordTarget>
```

Note: HL7 V3 standards like QRDA use a common hierarchy of Participation/ Role/Entity to represent persons, locations, etc. in the quality report. In the example above, <recordTarget> is a participation, <patientRole> is a role, and <patient> is an entity. The HIC number is not a personal ID like a driver license, but rather one that applies to that person's role as a patient.


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# Identifier Error Correction

The example to the right shows a corrected patient ID.

- The id element is present and in the correct location for a MEDICARE HIC number indicator, and uses the OID from the Eligible Provider rules.

```
<recordTarget>
  <patientRole>
    <id extension="12345"
       root=" 2.16.840.1.113883.4.572 "/>
    <addr use="HP">...</addr>
    ...
    <patient>
      <name use="L">...</name>
      ...
    </patient>
    ...
  </patientRole>
</recordTarget>
```


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# Identifier Error Correction for non HIC Patient ID

The example to the right shows a proper correction when the patient ID is not a HIC number.

- The id element is present and in the correct location for a non-HIC patient ID (an example SSN in this case).
- The root attribute must contain the associated OID, and the extension must contain the patient ID.

```
<recordTarget>
  <patientRole>
    <id extension =“000-00-0000"
        root=" 2.16.840.1.113883.4.1 "/>
    <addr use="HP">…</addr>
    …
    <patient>
      <name use="L">…</name>
      …
    </patient>
    …
  </patientRole>
</recordTarget>
```

Note: The root attribute OID is required in QRDA. You can look up the OIDs for many common ID types such as SSN, state driver license numbers, passport numbers for foreign nationals, etc., at the HL7 OID registry: http://www.hl7.org/oid.

As an exercise, go to the OID registry, type “passport” in the description field, and try to find the OID for a Canadian passport number.


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# Address Errors

- Error Messages
  - If the serviceEvent performer's assignedEntity 'state' element is present, it SHALL be submitted exactly once and be valid according to Appendix_AK-States in the posted Downloadable Resource table.
- Error Meaning
  - Addresses have several restrictions that go beyond the requirements of the QRDA XML Schema, including restrictions on the number of street address lines and the codes used for states.

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# Address Error Examples

The example to the right shows an invalid address.

- The state code is incorrect.

```
<addr use="HP">
  <streetAddressLine>17 Daws Rd.</streetAddressLine>
  <city>Blue Bell</city>
  <state>State of Massachusetts</state>
  <postalCode>02368</postalCode>
  <country>US</country>
</addr>
```


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# Address Error Correction

The example to the right shows a corrected.

- The state code is now correct

```
<addr use="HP">
  <streetAddressLine>17 Daws Rd. </streetAddressLine>
  <city>Blue Bell</city>
  <state>MA</state>
  <postalCode>02368</postalCode>
  <country>US</country>
</addr>
```


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# Template ID Errors

- Error Messages
  - The Measure Set section SHALL contain a 'templateId' from Appendix_AJ-Custom_Template_IDs of the Downloadable Resource table to identify a Measure Set.
  - The measure set 'templateId' element SHALL be submitted exactly once.
  - The nested Measure section SHALL contain at least one measure that belongs to the measure set containing at least one 'templateId' from Appendix_AJ-Custom_Template_IDs of the Downloadable Resource table to identify measure(s). The nested Measure section 'code' value SHALL be '55186-1' with 'codeSystem' value '2.16.840.1.113883.6.1'.
- Error Meaning
  - Template IDs drive validation. They are required to be present, and when found they trigger validation rules alert implementers to errors. Some templates have restrictions on the number of times they can be present in a document.

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# Template ID Error Examples

ClinicalDocument element is missing required QRDA template IDs.

Measure section is missing required template IDs.

Measure Reference organizer is missing required template IDs

```
<ClinicalDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:hl7-org:v3">
  <realmCode code="US"/>
  <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
  <id root="5b010313-eff2-432c-9909-6193d8416fac"/>
  ...
  <section>
    <code code="55186-1" codeSystem="2.16.840.1.113883.6.1"/>
    <title>Measure Section</title>
    <text>...</text>
    <entry>
      <organizer classCode="CLUSTER" moodCode="EVN">
        <id root="19ebf3bb-df27-4732-add3-5703c93e82ba" />
        <statusCode code="completed"/>
        <reference typeCode="REFR">
        ...
        </reference>
      </organizer>
    </entry>
  </section>
</ClinicalDocument>
```


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# Template ID Error Corrections

Required QRDA template IDs have been added.

Required section template IDs have been added.

Required Measure Reference organizer template IDs have been added.

Note: Since template IDs drive validation, adding template IDs may trigger new errors, making this is an iterative process.

```
<ClinicalDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:hl7-org:v3">
  <realmCode code="US"/>
  <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
  <templateId root="2.16.840.1.113883.10.20.22.1.1"/>
  <templateId root="2.16.840.1.113883.10.20.24.1.1"/>
  <templateId root="2.16.840.1.113883.10.20.24.1.2"/>
  <id root="5b010313-eff2-432c-9909-6193d8416fac"/>
  ...
  <section>
    <templateId root="2.16.840.1.113883.10.20.24.2.2"/>
    <templateId root="2.16.840.1.113883.10.20.24.2.3"/>
    <code code="55186-1" codeSystem="2.16.840.1.113883.6.1"/>
    <title>Measure Section</title>
    <text>...</text>
    <entry>
      <organizer classCode="CLUSTER" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.24.3.98"/>
        <templateId root="2.16.840.1.113883.10.20.24.3.97"/>
        <id root="19ebf3bb-df27-4732-add3-5703c93e82ba" />
        <statusCode code="completed"/>
        <reference typeCode="REFR">
        ...
        </reference>
      </organizer>
    </entry>
  </section>
</ClinicalDocument>
```


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# Terminology Errors

- Error Messages
  - The Procedures section SHALL contain exactly one procedure|act|observation combination of 'code' and 'codeSystem' attribute values from Appendix_G-Procedures of the Downloadable Resource table identifying clinical measure data according to the specifications.
  - The patient's ethnic group 'code' value SHALL be valid according to Appendix_AB-Ethnicity in the posted Downloadable Resource table.
  - The patient's race 'code' attribute value SHALL be valid according to Appendix_AD-Race in the posted Downloadable Resource table.
  - The problems section SHALL contain exactly one act combination of 'code' and 'codeSystem' attribute values from Appendix_C-Problems of the Downloadable Resource table identifying clinical data according to the specifications.
  - The measure section SHALL contain exactly one act 'code' from Appendix_AJ-Custom_Template_IDs of the Downloadable Resource table identifying a measure.
  - The serviceEvent 'code' value SHALL be valid according to Appendix_B-Encounters of the posted Downloadable Resource table for the current program year.
- Error Meaning
  - Various sections of a QRDA have specific requirements for which terminologies and value sets are used, and where the codes must go in the document.


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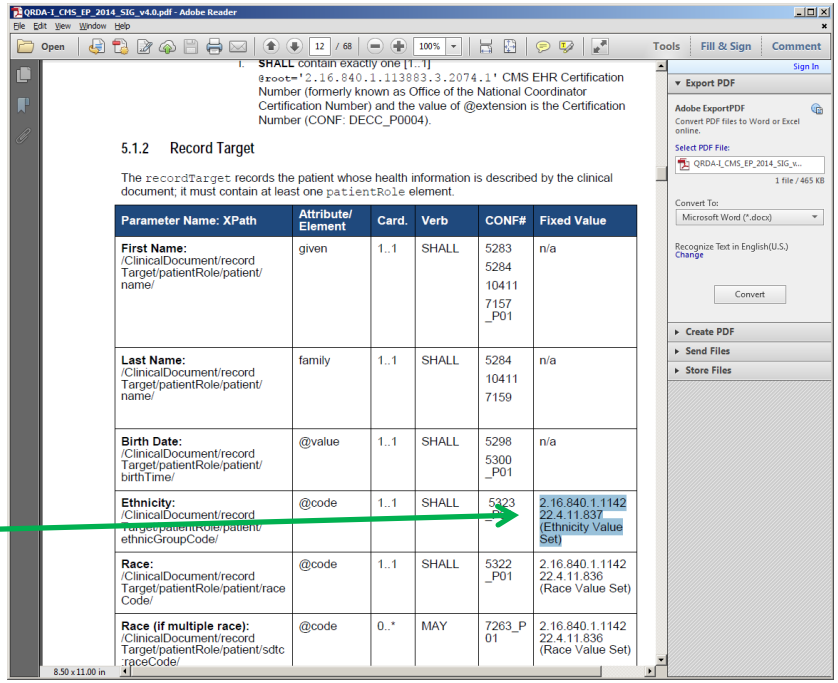
# Looking up Value Sets OIDs in the Specifications

Find the table or conformance statement in the CMS QRDA specifications appropriate for the information you are trying to send.

Typically there is a value set OID present.

The OID for the Ethnicity value set is: 2.16.840.1.114222.4.11.837



QRDA-I_CMS_EP_2014_SIG_v4.0.pdf - Adobe Reader

1. **SHALL** contain exactly one [1..1] `@root='2.16.840.1.113883.3.2074.1'` CMS EHR Certification Number (formerly known as Office of the National Coordinator Certification Number) and the value of @extension is the Certification Number (CONF: DECC_P0004).

### 5.1.2 Record Target

The `recordTarget` records the patient whose health information is described by the clinical document; it must contain at least one `patientRole` element.

| Parameter Name: XPath | Attribute/ Element | Card. | Verb | CONF# | Fixed Value |
|---|---|---|---|---|---|
| **First Name:** /ClinicalDocument/record Target/patientRole/patient/ name/ | given | 1..1 | SHALL | 5283<br>5284<br>10411<br>7157 _P01 | n/a |
| **Last Name:** /ClinicalDocument/record Target/patientRole/patient/ name/ | family | 1..1 | SHALL | 5284<br>10411<br>7159 | n/a |
| **Birth Date:** /ClinicalDocument/record Target/patientRole/patient/ birthTime/ | @value | 1..1 | SHALL | 5298<br>5300 _P01 | n/a |
| **Ethnicity:** /ClinicalDocument/record Target/patientRole/patient/ ethnicGroupCode/ | @code | 1..1 | SHALL | 5323 | 2.16.840.1.1142 22.4.11.837 (Ethnicity Value Set) |
| **Race:** /ClinicalDocument/record Target/patientRole/patient/race Code/ | @code | 1..1 | SHALL | 5322 _P01 | 2.16.840.1.1142 22.4.11.836 (Race Value Set) |
| **Race (if multiple race):** /ClinicalDocument/record Target/patientRole/patient/sdtc :raceCode/ | @code | 0..* | MAY | 7263_P 01 | 2.16.840.1.1142 22.4.11.836 (Race Value Set) |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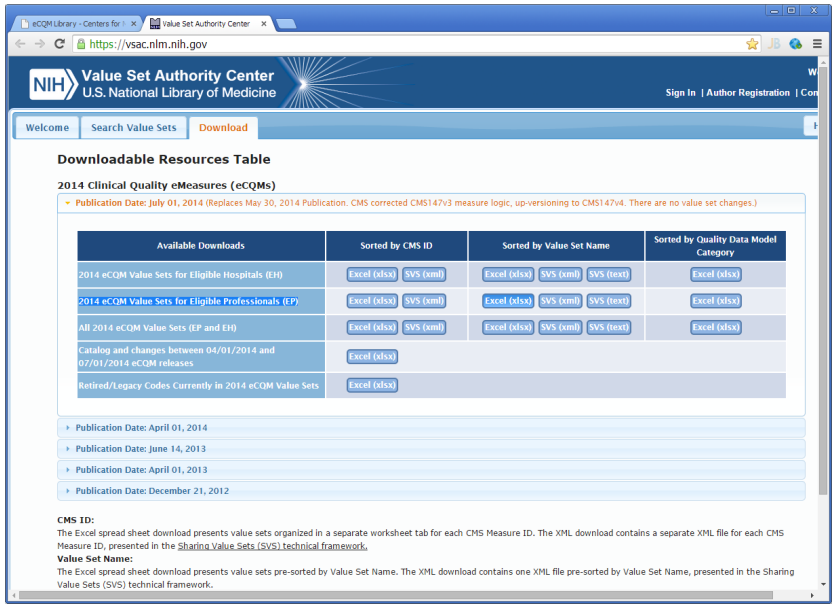
# Downloading Value Sets from VSAC

VSAC = Value Set Authority Center

https://vsac.nlm.nih.gov/

You will need to register and be approved for a UMLS account before you can download files.

Once you have a login, select an appropriate download, such as "2014 eCQM Value Sets for Eligible Professionals (EP)" Sorted by value set name in Excel format.





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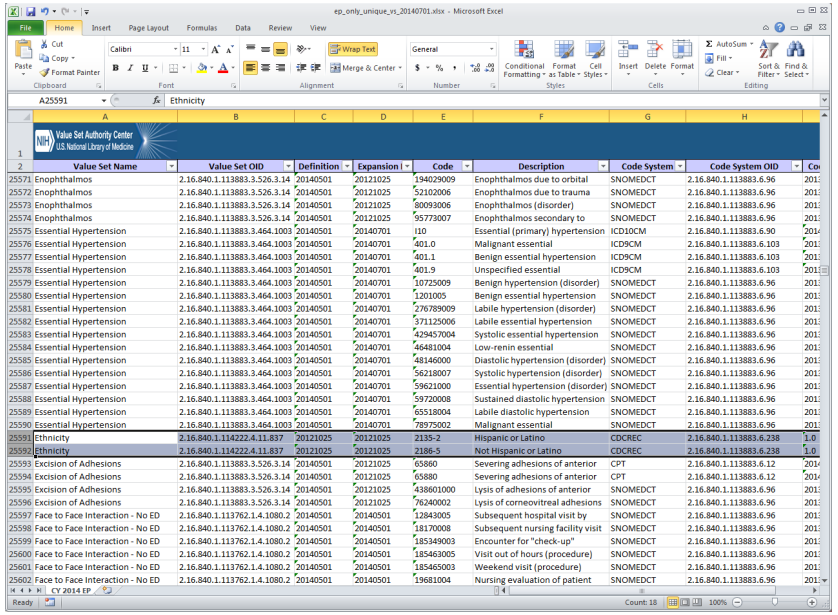
# Looking up Value Sets in the VSAC Download

- Search for the value set OID you found in the CMS guide.
- Example: Legal codes ethnicity are
  - 2135-2 (Hispanic or Latino)
  - 2186-5: (Not Hispanic or Latino)
- Be sure to note the code system OID, which is different from the value set OID.



| Value Set Name | Value Set OID | Definition | Expansion | Code | Description | Code System | Code System OID |
|---|---|---|---|---|---|---|---|
| Enophthalmos | 2.16.840.1.113883.3.526.3.14 | 20140501 | 20121025 | 194029009 | Enophthalmos due to orbital | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Enophthalmos | 2.16.840.1.113883.3.526.3.14 | 20140501 | 20121025 | 52102006 | Enophthalmos due to trauma | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Enophthalmos | 2.16.840.1.113883.3.526.3.14 | 20140501 | 20121025 | 80093006 | Enophthalmos (disorder) | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Enophthalmos | 2.16.840.1.113883.3.526.3.14 | 20140501 | 20121025 | 95773007 | Enophthalmos secondary to | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | I10 | Essential (primary) hypertension | ICD10CM | 2.16.840.1.113883.6.90 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 401.0 | Malignant essential | ICD9CM | 2.16.840.1.113883.6.103 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 401.1 | Benign essential hypertension | ICD9CM | 2.16.840.1.113883.6.103 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 401.9 | Unspecified essential | ICD9CM | 2.16.840.1.113883.6.103 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 10725009 | Benign hypertension (disorder) | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 1201005 | Benign essential hypertension | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 276789009 | Labile hypertension (disorder) | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 371125006 | Labile essential hypertension | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 429457004 | Systolic essential hypertension | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 46481004 | Low-renin essential | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 48146000 | Diastolic hypertension (disorder) | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 56218007 | Systolic hypertension (disorder) | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 59621000 | Essential hypertension (disorder) | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 59720008 | Sustained diastolic hypertension | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 65518004 | Labile diastolic hypertension | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Essential Hypertension | 2.16.840.1.113883.3.464.1003 | 20140501 | 20140701 | 78975002 | Malignant essential | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Ethnicity | 2.16.840.1.114222.4.11.837 | 20121025 | 20121025 | 2135-2 | Hispanic or Latino | CDCREC | 2.16.840.1.113883.6.238 |
| Ethnicity | 2.16.840.1.114222.4.11.837 | 20121025 | 20121025 | 2186-5 | Not Hispanic or Latino | CDCREC | 2.16.840.1.113883.6.238 |
| Excision of Adhesions | 2.16.840.1.113883.3.526.3.14 | 20140501 | 20121025 | 65860 | Severing adhesions of anterior | CPT | 2.16.840.1.113883.6.12 |
| Excision of Adhesions | 2.16.840.1.113883.3.526.3.14 | 20140501 | 20121025 | 65880 | Severing adhesions of anterior | CPT | 2.16.840.1.113883.6.12 |
| Excision of Adhesions | 2.16.840.1.113883.3.526.3.14 | 20140501 | 20121025 | 438601000 | Lysis of adhesions of anterior | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Excision of Adhesions | 2.16.840.1.113883.3.526.3.14 | 20140501 | 20121025 | 76240002 | Lysis of corneovitreal adhesions | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Face to Face Interaction - No ED | 2.16.840.1.113762.1.4.1080.2 | 20140501 | 20140501 | 12843005 | Subsequent hospital visit by | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Face to Face Interaction - No ED | 2.16.840.1.113762.1.4.1080.2 | 20140501 | 20140501 | 18170008 | Subsequent nursing facility visit | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Face to Face Interaction - No ED | 2.16.840.1.113762.1.4.1080.2 | 20140501 | 20140501 | 185349003 | Encounter for "check-up" | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Face to Face Interaction - No ED | 2.16.840.1.113762.1.4.1080.2 | 20140501 | 20140501 | 185463005 | Visit out of hours (procedure) | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Face to Face Interaction - No ED | 2.16.840.1.113762.1.4.1080.2 | 20140501 | 20140501 | 185465003 | Weekend visit (procedure) | SNOMEDCT | 2.16.840.1.113883.6.96 |
| Face to Face Interaction - No ED | 2.16.840.1.113762.1.4.1080.2 | 20140501 | 20140501 | 19681004 | Nursing evaluation of patient | SNOMEDCT | 2.16.840.1.113883.6.96 |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# Terminology Error Examples

The example to the right shows two invalid ethnic group codes.

- The ethnicGroupCode element is missing entirely.
- The ethnicGroupCode element is present but empty.

```
<patient>
 ...
 <raceCode code="2106-3"
codeSystem="2.16.840.1.113883.6.238"
codeSystemName="Race &amp; Ethnicity - CDC"
displayName="White"/>
<guardian>...</guardian>
 ...
</patient>
```

```
<patient>
 ...
<ethnicGroupCode/>
 <guardian>...</guardian>
 ...
</patient>
```


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# Terminology Error Partial Correction

The example to the right shows two valid ethnic group codes.

- The ethnicGroupCode element is present populated, but uses an invalid code and has the value set OID in the codeSystem attribute.

```
<patient>
 ...
<ethnicGroupCode code=" Not Hispanic or Latino"
   codeSystem="2.16.840.1.114222.4.11.837" />
  ...
</patient>
```


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# Terminology Error Correction

The example to the right shows two valid ethnic group codes.

- The ethnicGroupCode element is fully specified with a valid code and code system.

```
<patient>
 ...
<ethnicGroupCode code="2186-5"
   codeSystem="2.16.840.1.113883.6.238"
   displayName="Not Hispanic or Latino"/>
  ...
</patient>
```


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# Terminology Work Arounds – Null Flavors

- Sometimes implementers need to be able to say “I don’t have any information”.
- This is done using the nullFlavor attribute.
- The default nullFlavor is NI, for “No information”. Others can be found in the QRDA specifications if needed.

```
<patient>
 …
<ethnicGroupCode nullFlavor=“NI"/>
  …
</patient>
```


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# QRDA Debugging Approaches

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# Debugging QRDA Files Before Submission

The best way to prevent submission errors is to validate your QRDA documents before submitting them.

There are two primary validation steps all implementers should perform locally:

- Validate against the QRDA XML Schema from HL7
- Validate against the QRDA Schematron File from HL7

Additionally, QRDA files may be submitted as Test Submissions using the SEVT tool on the PQRS portal:

https://www.qualitynet.org/portal/server.pt/community/pqri_home/212


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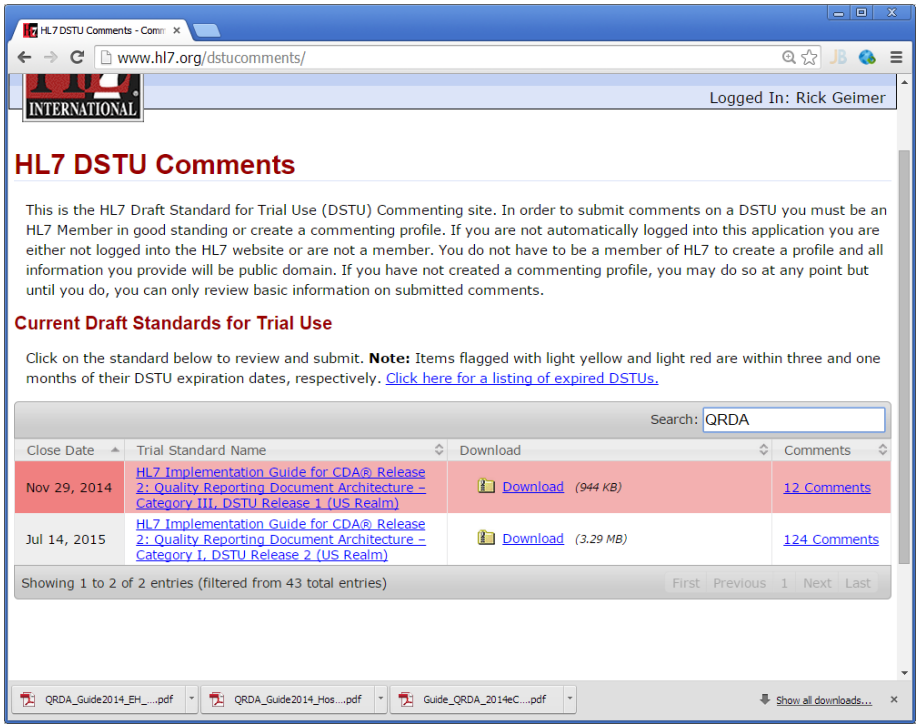
# Downloading the HL7 QRDA Package

http://www.hl7.org/dstucomments/

- Search for "QRDA."
- Go to the row for Category 1 (currently the 2nd search result).
- Click the download link for the appropriate implementation guide (Category I or Category III).





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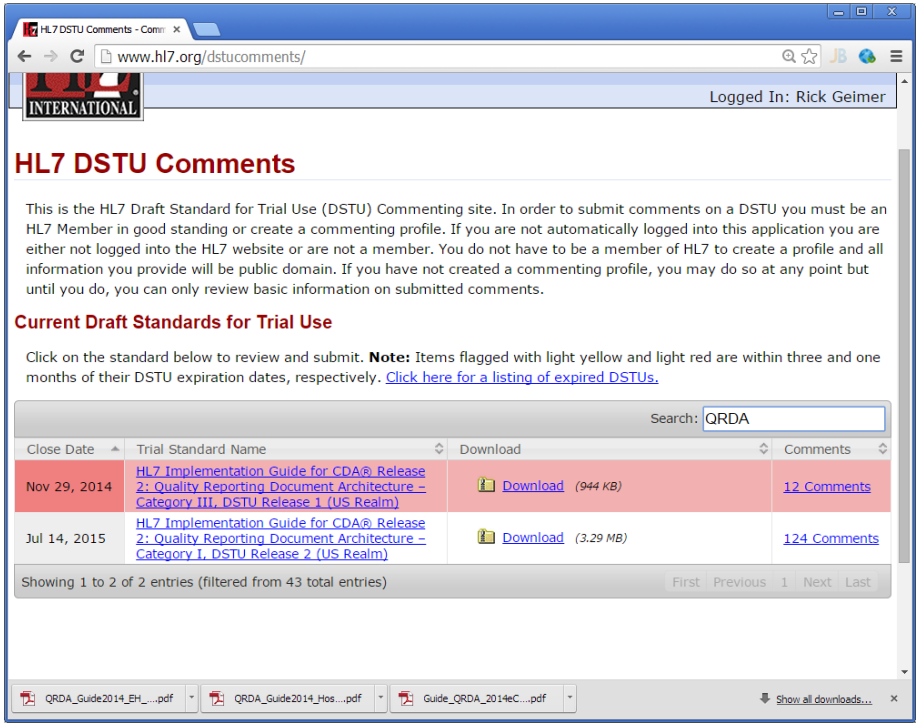
# Temporary Workaround for QRDA Category III

Due to a procedural glitch, QRDA Category III was inadvertently allowed to expire. A renewal request is in progress and this should be fixed very soon, but for the time being go here:

http://www.hl7.org/dstucomments/index_expired.cfm

- Search for "Quality."
- Go to the row for Category III (currently the 3rd search result).
- Click the download link.





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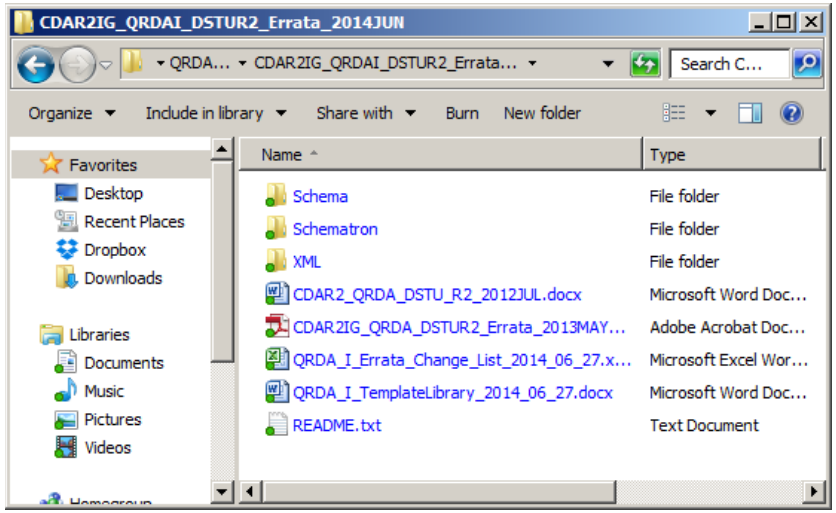
# Navigating the HL7 QRDA Category I Package

The ZIP file from HL7 contains several files and folders.

The Schema folder contains the QRDA XML Schema.

The Schematron folder contains the QRDA Schematron file and related vocabulary.





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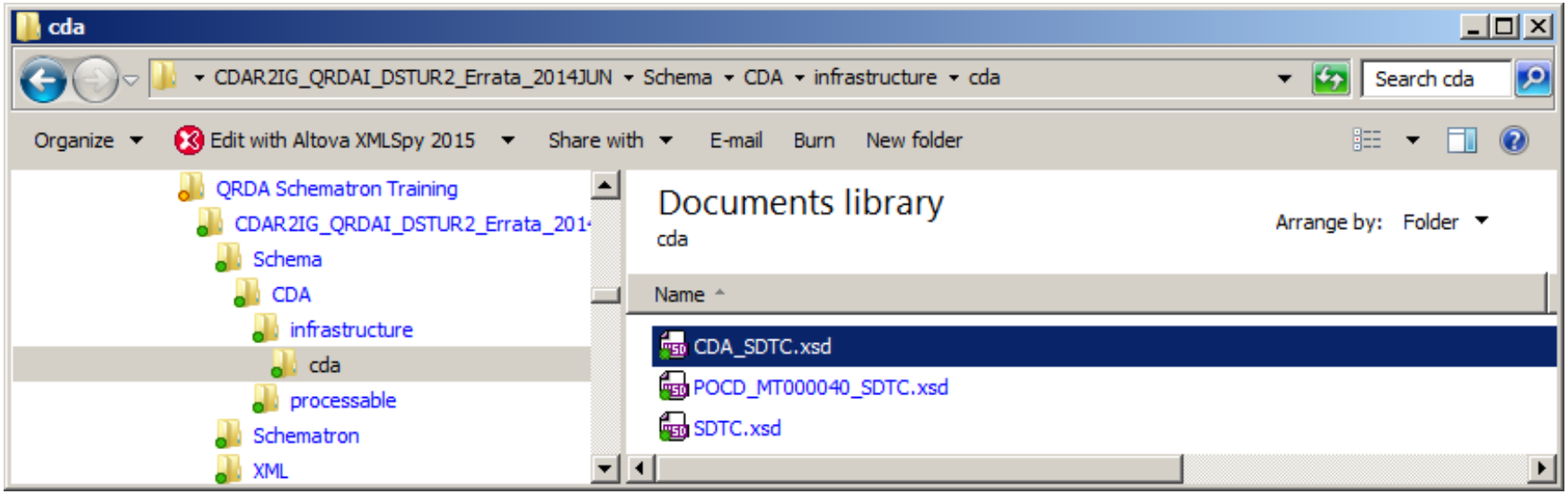
# Navigating to the QRDA XML Schema

- The main XML Schema file is called CDA_SDTC.xsd.
  - The file is in Schema/CDA/infrastructure/cda.
  - This file is not standalone and is not safe to move by itself, as it references other files in the Schema directory of the QRDA package.
  - If you need to move the schema, move the entire Schema folder.
  - **Note:** the QRDA Category III package does not contain an XML Schema file, but you can use the one from QRDA Category I.





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# Associating a QRDA file with the Schema

- To associate a QRDA file with the QRDA XML Schema, add an xsi:schemaLocation attribute to the ClinicalDocument element at the root of the QRDA file.
- The value of the attribute is the relative or absolute path to the CDA_SDTC.xsd file.

```
<ClinicalDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns="urn:hl7-org:v3" xmlns:voc="urn:hl7-org:v3/voc" xmlns:cda="urn:hl7-org:v3"
 xmlns:sdtc="urn:hl7-org:sdtc"
 xsi:schemaLocation="urn:hl7-org:v3 Schema/CDA/infrastructure/cda/CDA_SDTC.xsd"
 >
...
</ClinicalDocument>
```


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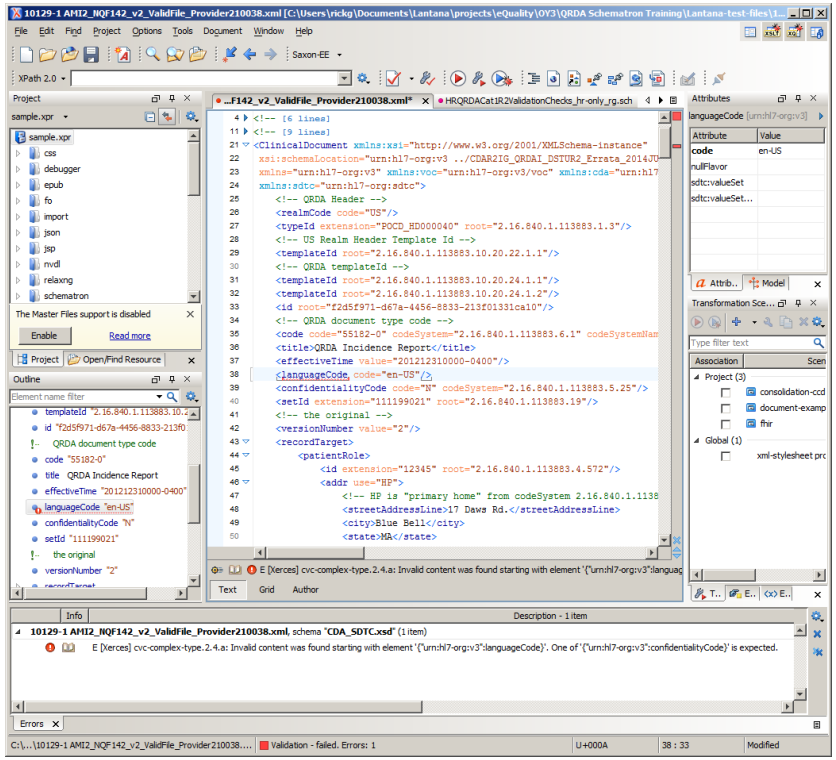
# Validating Against the QRDA XML Schema

Open the QRDA file in an XML editor that supports XML Schema and validate the QRDA.

Correct any errors it reports and validate again.

The example to the right shows validation in Oxygen XML Editor.





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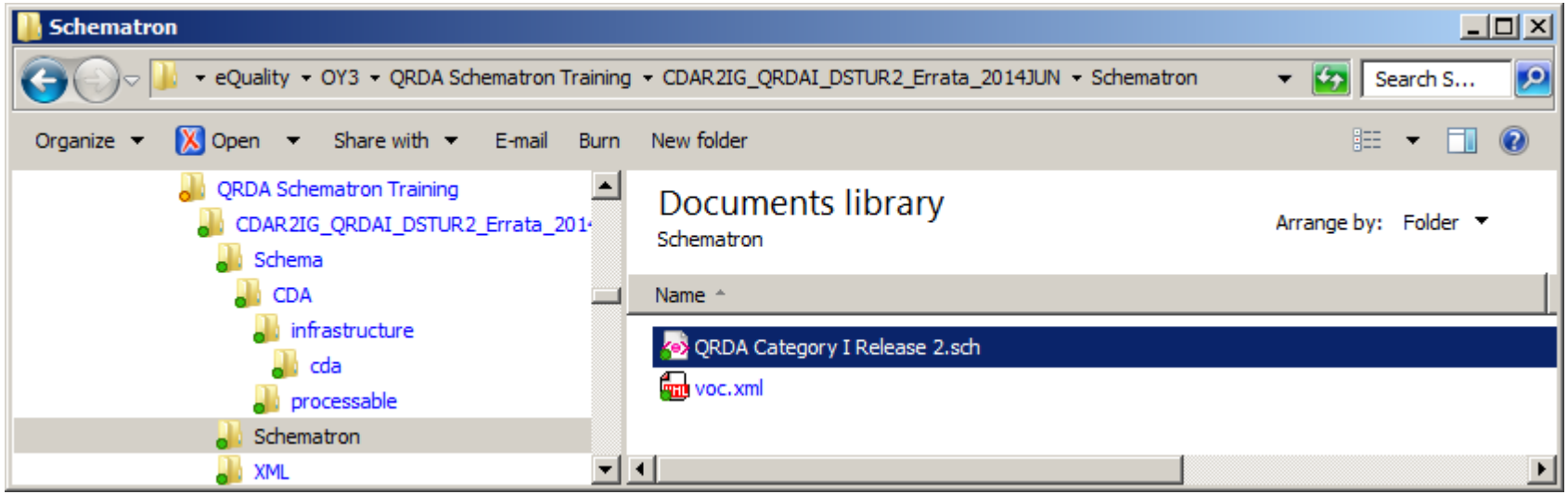
# Navigating to the QRDA Category I Schematron Schema

- The main Schematron file is called "QRDA Category I Release 2.sch."
  - This file is not standalone and is not safe to move alone.
  - It references the voc.xml file in the same directory of the QRDA package. The two files must be moved together.





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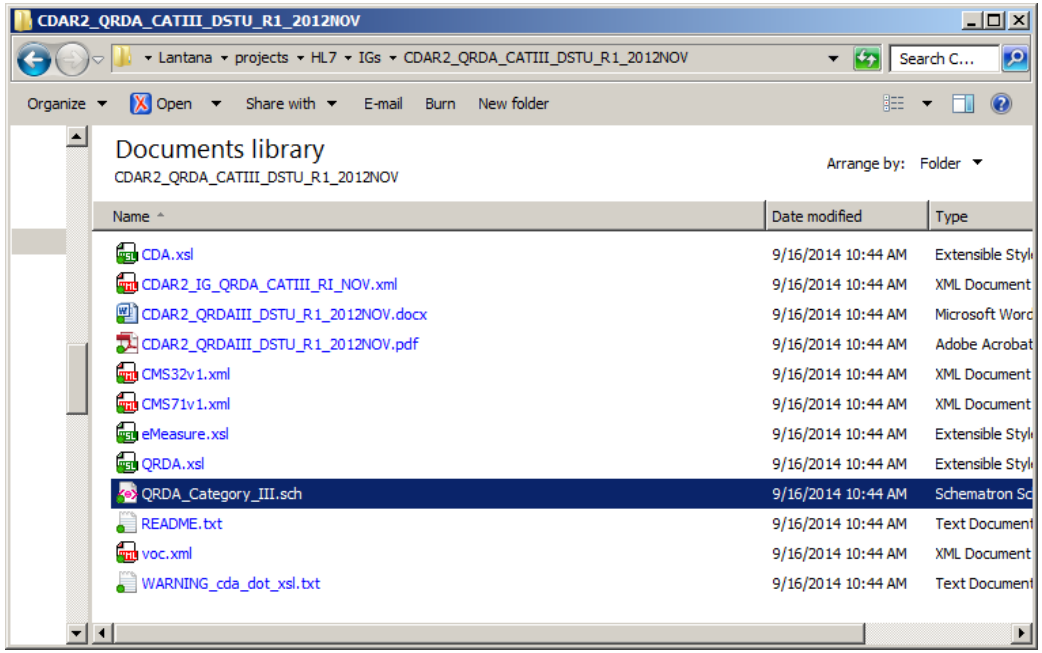
# Navigating to the QRDA Category 3 Schematron Schema

The Schematron file is called "QRDA_Category_III.sch"

- This file is not standalone and is not safe to move alone.
- It references the voc.xml file in the same directory of the QRDA package. The two files must be moved together.





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# Associating a QRDA File with the Schematron

- To associate a QRDA file with the QRDA XML Schema, add an xml-model processing instruction before the ClinicalDocument element at the root of the QRDA file.
  - See http://www.w3.org/TR/xml-model/ for information about xml-model.
- The value of the href pseudo-attribute of the processing instruction is the relative or absolute path to the CDA_SDTC.xsd file.

```
<?xml version="1.0" encoding="utf-8" standalone="no"?>
<?xml-model href="/Schematron/QRDA%20Category%20I%20Release%202.sch"
type="application/xml" schematypens=http://purl.oclc.org/dsdl/schematron?>
<ClinicalDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns="urn:hl7-org:v3" xmlns:voc="urn:hl7-org:v3/voc" xmlns:cda="urn:hl7-org:v3"
 xmlns:sdtc="urn:hl7-org:sdtc" >
...
</ClinicalDocument>
```


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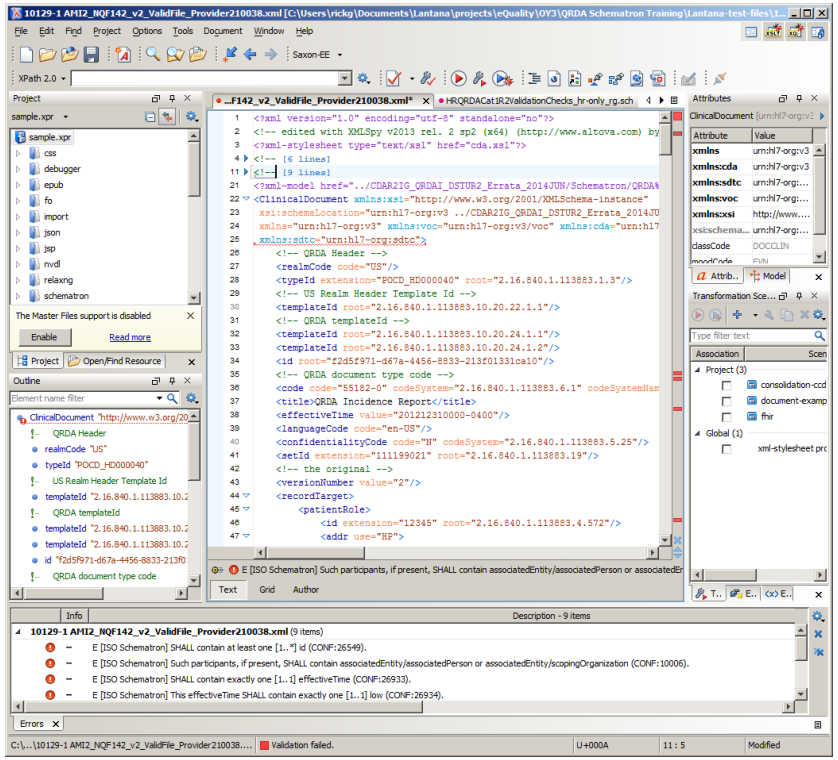
# Validating Against the QRDA Schematron Schema

Open the QRDA file in an XML editor that supports Schematron, and validate the QRDA.

If prompted for a phase, choose “errors.”

Correct any errors it reports, and validate again until error-free.

The example to the right shows validation in Oxygen XML Editor.





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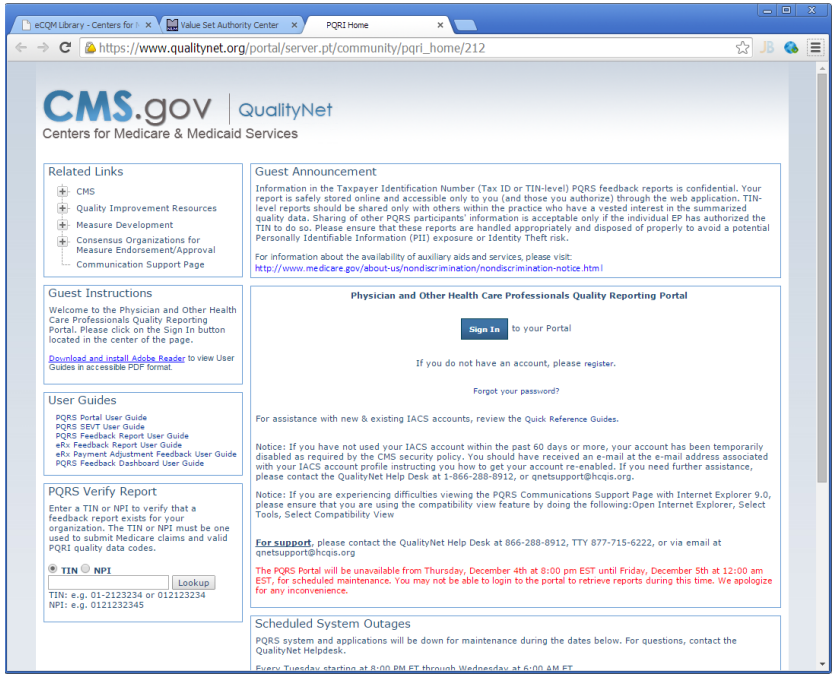
# Validating Test Submissions Using SEVT

- Submitters can upload test QRDA files at any time using the Submission Engine Validation Tool (SEVT) on the PQRS Portal.
- Test submissions are validated against the same schemas and rules used for Production files; this allows users to find and correct errors prior to submitting files as Production.
- Test submissions are kept separate from Production submissions for reporting purposes.
- Test files are flagged as “Test Cases” on the Submission Reports.




https://www.qualitynet.org/portal/server.pt/community/pqri_home/212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# Questions?

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# How to Represent the Number of Patients for a Particular Payor?

Use the Payer Supplemental Data Element template.

The payor type is selected from value set 2.16.840.1.114222.4.11.3591 (look up in VSAC). The code "1" represents Medicare. Remember to use the code system OID from VSAC, not the value set OID.

Use the Aggregate Count template to provide the actual count.

```
<observation classCode="OBS" moodCode="EVN">
<!-- Payer Supplemental Data -->
<templateId root="2.16.840.1.113883.10.20.27.3.9"/>
<templateId root="2.16.840.1.113883.10.20.24.3.55"/>
<id nullFlavor="NA"/>
<code code="48768-6" codeSystem="2.16.840.1.113883.6.1"
displayName="Payment sources"/>
<statusCode code="completed"/>
<effectiveTime>
        <low nullFlavor="NA"/>
        <high nullFlavor="NA"/>
</effectiveTime>
<value xsi:type="CD" code="1" codeSystem="2.16.840.1.113883.3.221.5"
displayName="Medicare"/>
<entryRelationship typeCode="SUBJ" inversionInd="true">
        <!-- Aggregate Count template -->
        <observation classCode="OBS" moodCode="EVN">
                <templateId root="2.16.840.1.113883.10.20.27.3.3"/>
                <code code="MSRAGG" displayName="rate aggregation"
codeSystem="2.16.840.1.113883.5.4" codeSystemName="ActCode"/>
                <value xsi:type="INT" value="2"/>
                <methodCode code="COUNT" displayName="Count"
codeSystem="2.16.840.1.113883.5.84" codeSystemName="ObservationMethod"/>
        </observation>
</entryRelationship>
</observation>
```


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# Resources

General questions about submitting test and production files:

QualityNet HelpDesk - Qnetsupport@hcqis.org
1.866.288.8912 7 a.m.-7 p.m. CT Monday through Friday

The JIRA – ONC Project Tracking website (http://oncprojectracking.org/) is a resource to submit questions for the following:

- issues identified with eCQM logic;
- reviewing FAQs;
- obtaining clarification on specifications;
- asking questions regarding CQM certification;
- submitting questions and/or comments about the Combined QRDA Implementation Guide for 2015; and
- questions regarding the EHR Incentive Program.

Note: there are 2 Jira projects for issues - one is the CQM Issue tracker and the second is QRDA Project.


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