Cypress™

Cypress Tech Talk

December 4, 2018

Agenda

- Software Updates
  - Cypress Validation Utility + Calculation Check (CVU+)
  - Evolving Electronic Clinical Quality Measure (eCQM) Standards—Quality Data Model (QDM) vs Clinical Quality Language (CQL) Timing
- Recent Issues
  - CYPRESS-1525: Patient Characteristic Sex in Record Sample
  - CYPRESS-1537: "relatedTo" attribute in Record Sample
- Cypress Versions
- Open Discussion
- Contact Information

Software Updates
Introducing, CVU + Calculation Check

- **Cypress v5 will include a new feature named the Cypress Validation Utility + Calculation Check (CVU+)**
- **This feature seeks to address the vendor concern that the 'certification process does not mirror a production scenario for electronic Clinical Quality Measure (eCQM) reporting'**
  - Certification uses a constrained set of test patients
  - Certification does not enforce reporting program requirements (i.e., CMS Implementation Guide)
- **CVU+ will supplement the existing certification program**
  - Use of CVU+ is not currently a requirement of the program

Software Updates
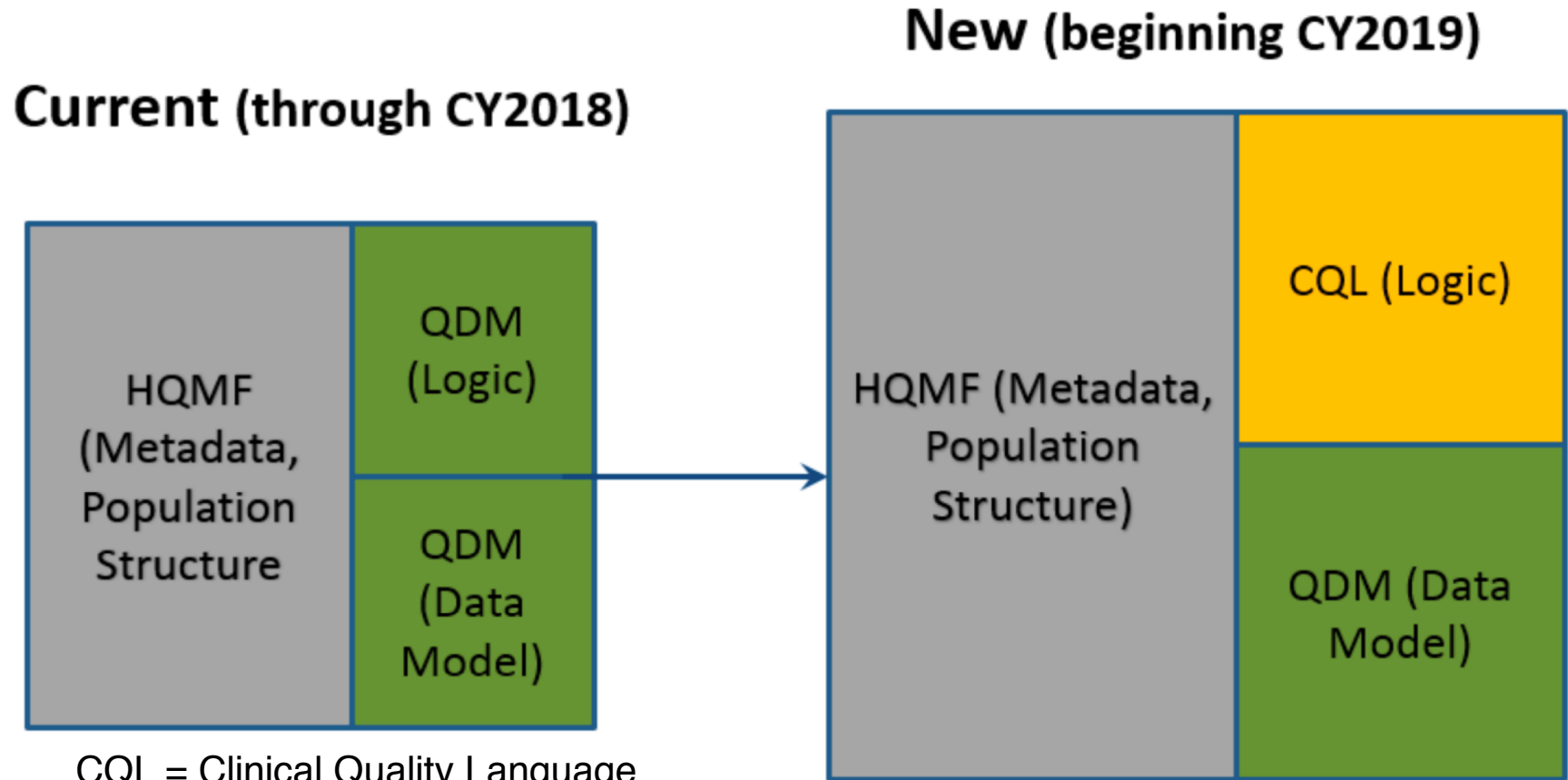# CVU + Calculation Check – Features

- **Enhanced verification of a Health Information Technology (IT) system's eCQM calculations**

  - Using a combination of Cypress defined patients, and "bring your own" patients

  - Calculation for multiple eCQMs at once

- **Verification of a Health IT system's ability to be configured (by a provider) to report to CMS programs**

  - CVU+ will test conformance with program specific requirements in the CMS Quality Reporting Document Architecture (QRDA) Implementation Guides

Software Updates
CVU + Calculation Check – Seeking Input

- **Cypress plans to begin development of the CVU+ this fall for preliminary release in Spring 2019**

  – Final release in Summer 2019 with Cypress v5

- **Seeking input for features to be included with CVU+**
- **Continued discussion at future Tech Talks**

Software Updates
Evolving eCQM Standards—QDM vs CQL Timing

Current (through CY2018)

HQMF (Metadata, Population Structure	QDM (Logic)
	QDM (Data Model)

New (beginning CY2019)

HQMF (Metadata, Population Structure)	CQL (Logic)
	QDM (Data Model)

CQL = Clinical Quality Language

QDM = Quality Data Model

HQMF = Health Quality Measure Format

Software Updates
Instant Granularity

- **A CQL instant (calendar date/date + time of day) can contain varying levels of precision**
  - Instant I1: 2012
  - Instant I2: 2012-03
  - Instant I3: 2012-03-10
  - Instant I4: 2012-03-10 22
  - Instant I5: 2012-03-10 22:05
  - Instant I6: 2012-03-10 22:05:09
- **In QDM, instants must support at least "minute"-level precision**
- **CQL instants have a maximum precision of milliseconds**

Software Updates
Comparing Instants

- **Both CQL and QDM support comparison of instants**
  - Is one before or after the other?
- **CQL and QDM handle "unknown" instants differently**
- **In QDM, an instant being "null" results in the comparison being "false"**
  - DateTime(2015,2,5) Ends Before Start Of null
  - "False" in this case means that February 5, 2015 ends before start of "null", which is not true
- **In CQL, if one is "null" (unknown), the result is also "null"**
  - DateTime(2015,2,5) < null
    - Returns "null"

Software Updates
Managing Uncertainty

- **CQL can compare instants even when data is partially missing**
- **If the missing data doesn't affect the comparison, the answer is returned**
- **DateTime(2012) < DateTime(2014, 2, 15)**
  - True
- **DateTime(2015) < DateTime(2014, 2, 15)**
  - False
- **DateTime(2014) < DateTime(2014, 2, 15)**
  - Null

Software Updates
Calculating Interval Durations

- **QDM and CQL both count intervals of time in "buckets"; made up of years, which get divided into smaller buckets (months, days, hours, minutes, etc.) as necessary**
  - QDM's smallest bucket size is 1 minute
  - CQL's smallest bucket size is 1 millisecond
- **QDM can only calculate "duration" between two instants**
  - In other words, the number of whole bucket units that can fit between two instants
  - duration in months between @2014-01-31 and @2014-04-01
    - 2
  - duration in months between @2014-01-31 and @2014-02-01
    - 0
- **CQL can also calculate "durations"**

Software Updates
Calculating interval differences

- **CQL can also calculate "difference" between two instants**
  - Number of bucket boundaries crossed
  - duration in months between @2014-01-31 and @2014-04-01
    - 3
  - duration in months between @2014-01-31 and @2014-02-01
    - 1
- **QDM does not have this concept of "difference"**

Software Updates
Additional CQL/timing resources

- **ESAC CQL Formatting & Usage Wiki**

  - https://github.com/esacinc/CQL-Formatting-and-Usage-Wiki/wiki/

- **Electronic Clinical Quality Improvement (eCQI) Resource Center "CQL Q&As"**

  - https://ecqi.healthit.gov/cql/CQ-Qs%26As

- **eCQI Resource Center CQL Resources**

  - https://ecqi.healthit.gov/cql-clinical-quality-language

- **ONC/CMS 2018 eCQM Logic and Implementation Guidance**

  - https://ecqi.healthit.gov/system/files/eCQM-Logic-and-Guidance-2018-0504.pdf

Software Updates
Bugs addressed in 4.0.1 patch release

Recent Issue
CYPRESS-1525: Patient Characteristic Sex in Record Sample

- **Precondition**
  - A Cypress 4.0.1 instance
  - Editing Record Sample Test
- **Issue**
  - When editing a Record Sample Test Data Criteria list, there are a number of options for replacement data criteria
  - If the user selects Patient Characteristic Sex, and saves the test, they receive a Server Error message.
- **Workaround:**
  - Patient Characteristic Sex is considered too trivial to be included by default in the test
  - Vendors and ATLs should not swap Patient Characteristic Sex in, should use any other criteria

Recent Issue

CYPRESS-1537: "relatedTo" attribute in Record Sample

- **Precondition**
  - A Cypress 4.0.1 instance
  - Measures with "Communication: From Provider To Provider"
    - Uses "relatedTo" attribute
    - Ex: CMS50v7
  - "Communication: From Provider To Provider" is randomly selected for test

- **Issue**
  - Cypress expecting retired "fulfills" template id for the "Communication: From Provider To Provider" attribute "relatedTo"
  - "relatedTo" id should be accepted instead

- **Workaround:**
  - Only necessary if Record Sample Test for CMS50v7 is generated with a "Communication: From Provider To Provider"
  - That data criteria should be swapped out for any other available data criteria option
  - May reach out to ATL to edit the test and swap this criteria

Edit Test

CMS50v7 Closing the Referral Loop: Receipt of Specialist Report

Validated in QRDA	Data Criteria	Section	Required Attributes	Value Set(s)	Recorde
		Valuesets		Consultant Report 2.16.840.1.113883.3.464.1003.121.12.1006	Code
	Communication: From Provider To Provider				
		Attributes	relatedTo •	relatedTo	Recorde

Previous version:

9.5 **Fulfills (V2)**
Fulfills (V2) (urn:hl7ii:2.16.840.1.113883.10.20.24.3.126:2016-08-01)

Cypress should be expecting:

4.2 **Related To**
[sdtc:inFulfillmentOf1: identifier
urn:hl7ii:2.16.840.1.113883.10.20.24.3.150:2017-08-01 (open)]

Context in Communication from Provider to Provider:

11. **MAY** contain zero or more [0..*] **Related To** (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.24.3.150:2017-08-01) (CONF:3343-29118).
Note: QDM Attribute: relatedTo

Figure 26: Communication from Provider to Provider (V4) Example

Cypress Versions

Version	Dates	Measures Supported
V 3.2.3	December 14, 2017	Support for the eCQMs for the 2018 Reporting/Performance Period ***will be supported alongside Cypress v4**
V4.0.1	**October 11, 2018**	Support for the eCQMs for the 2019 Reporting/Performance Period Support for Clinical Quality Language (CQL) calculation

Bundle Version	Dates	Features
2017.0.3	April 24, 2018	**Cypress v3 only** "Z1 BH Adult" updated for CMS128v6
2017.0.4	September 25, 2018	**Cypress v3 only** Errata update to fix 'Download All Patients' feature when 2017.0.3 and 2017.0.2 are installed simultaneously
2018.0.1	July 26, 2018	**Cypress v4 only** CQL-based measures released in 2018 for the 2019 reporting year eCQM Value Sets as of 5/4/2018.
2018.1.0	**October 11, 2018**	**Cypress v4 only** CQL-based measures released in 2018 for the 2019 reporting year eCQM Value Sets as of 9/17/2018.

OPEN DISCUSSION

Next Cypress Tech Talk

- Tuesday, December 18, 2018 at 1pm ET
- To join online, visit: https://meetings.cms.gov/orion/joinmeeting.do?MTID=98271705d4bcc4ad148cf1e39d5c7408
- To join via phone, dial: 1-877-267-1577
- Meeting Number: 998 084 717
- Meeting link, as well as a calendar event file, available at:
  - https://www.healthit.gov/cypress/techtalks.html

Notes

- **Completed Webinars will be posted on the Cypress Website on the Timeline Tab**
  - https://www.healthit.gov/cypress/techtalks.html

- **Send questions and feedback to the Cypress Talk List at**
  - project-cypress-talk@googlegroups.com

- **Report bugs and issues to the Cypress JIRA at**
  - https://oncprojectracking.healthit.gov/support/browse/CYPRESS