

Cypress™

Cypress Tech Talk

August 13, 2019



MITRE

The Office of the National Coordinator for
Health Information Technology



Agenda

- Software Updates
 - Cypress Validation Utility + Calculation Check (CVU+)
 - Cypress 5 Releases
 - Upcoming Feature: CVU+ Measure Highlighting
 - Recent Updates
- Recent Issues
- Cypress Versions
- Open Discussion
- Contact Information

Cypress Validation Utility + Calculation Check (CVU+)

- **Cypress v5 will include a new set of features called Cypress Validation Utility + Calculation Check (CVU+)**
- **CVU+ 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 the CVU+ is not currently a requirement of the program

Perform Tests using Developer-Generated test patients

- CVU+ supports developer-generated test patients, allowing vendors to supplement Cypress test patients with their own test patients to increase eCQM logic/code coverage.
 - Pre-certification tests will no longer be constrained to using Cypress generated tests patients

Health IT Vendor Patient List

Filter Patients

Type to search by measure

Type the name or CMS ID of a measure

Annual Update Bundle

☒ Cypress 5.0.0 Beta Bundle

All Patients

[View Patient Analytics](#)

Select	Patient Name	DOB	Gender
<input type="checkbox"/>	B GP Adult	February 1, 1958	Female
<input type="checkbox"/>	D BH Adult	January 7, 1990	Male
<input type="checkbox"/>	B AMI	January 5, 1945	Female
<input type="checkbox"/>	B NEWBORN	May 2, 2012	Female
<input type="checkbox"/>	D AMI	January 12, 1945	Female
<input type="checkbox"/>	A Cancer Female	September 1, 1957	Female
<input type="checkbox"/>	A BH Infant	November 1, 2011	Female

Analyze rigor of Developer-Generated test patients

- CVU+ performs analysis on uploaded developer-generated test patients.
- Statistics include:
 - Measure Coverage
 - Logic Coverage
 - Valuesets used
 - Code Systems used
 - Data Element Types used

cypress 5.0.x

Dashboard Vendor: Health IT Vendor Patient List > Analysis

Analysis of Patients

Data Type	Value
# Patients ⓘ	7
Measure Coverage ⓘ	37.3% (22 of 59)
Population Coverage ⓘ	44.8% Missing Populations
# Data Element Types ⓘ	20
# Valuesets Used ⓘ	61
Valuesets Coverage ⓘ	8.3%
Uncovered Valuesets ⓘ	677 Uncovered Valuesets
Code System per Valueset Coverage ⓘ	8.2%
Uncovered Code Systems in each Valueset ⓘ	1076 Uncovered Code Systems
Average Percent Code Coverage per Valueset ⓘ	3.0%
Logic Coverage ⓘ	Logic Coverage Per Measure
Least Logic Coverage ⓘ	CMS190v8 (9.4%)
Average Logic Coverage ⓘ	44.2%

CVU+ Features

Verify QRDA Export and eCQM Calculations

- CVU+ performs and displays eCQM calculation for uploaded developer-generated test patients.
- eCQM calculations are displayed for all eCQMs where developer-generated test patients meet the IPP requirements.

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Dashboard Master Patient List dczulada@mitre.org Admin Log Out

Dashboard Vendor: Health IT Vendor Patient List Patient: B GP Adult

Measure Information

	IPOP	DENOM	NUMER	DENEX	DENEXCEP
CMS2v9 - PopulationSet_1	●	●	○	○	○
CMS22v8 - PopulationSet_1	●	●	●	○	○
CMS50v8 - PopulationSet_1	●	●	●	○	○
CMS68v9 - PopulationSet_1	2	2	1	○	○
CMS69v8 - PopulationSet_1	●	●	●	○	○
CMS124v8 - PopulationSet_1	●	●	●	○	○
CMS125v8 - PopulationSet_1	●	●	●	○	○
CMS130v8 - PopulationSet_1	●	●	○	○	○
CMS138v8 - PopulationSet_1	●	●	●	○	○
CMS138v8 - PopulationSet_2	●	●	●	○	○
CMS138v8 - PopulationSet_3	●	●	●	○	○
CMS147v9 - PopulationSet_1	●	●	○	○	○
CMS249v2 - PopulationSet_1	●	●	○	○	○
CMS347v3 - PopulationSet_1	●	○	○	○	○
CMS347v3 - PopulationSet_2	●	○	○	○	○
CMS347v3 - PopulationSet_3	●	○	○	○	○
CMS349v2 - PopulationSet_1	●	●	○	○	○

Cypress Certification Patient Test Record: B GP Adult

Patient	B GP Adult	Sex	
Date of birth		Date of expiration	
Race		Ethnicity	
Insurance Providers		Patient IDs	5d2de151c1c38835d22a0be4 Cypress
Contact info			

QDM::AssessmentPerformed

Tobacco Use Screening

Codes:
LOINC: 72166-2

Time Elements:
Author Date/Time: 2012-06-25T14:15:00.000+00:00

Other Fields:
Result: 110483000 (SNOMEDCT)

QDM::CommunicationPerformed

Consultant Report

Codes:
LOINC: 11488-4
SNOMEDCT: 371530004

Time Elements:
Relevant Period Start: 2012-04-02T15:00:00.000Z
Author Date/Time: 2012-04-02T15:00:00.000+00:00

Other Fields:

QDM::DiagnosticStudyPerformed

CVU+ Features

Upcoming Feature: Measure Highlighting

- In addition to calculation data, CVU+ will show clause highlighting to better understand calculations
- Green:** clause criteria is met by patient
- Red:** clause criteria is not met by patient
- None:** N/A, clause criteria is not evaluated

cypress 5.0.0 Dashboard Master Patient List laurend@mitre.org Admin Log Out

Dashboard Vendor: Demo Patient List Patient: Brian Cross

Measure Information

IPOP DENOM NUMER DENEX DENEXCEP

CMS2v9 - PopulationSet 1 ● ● ○ ● ○

[View Logic Highlighting](#)

Populations

Initial Population

```
define "Initial Population";
  "Patient Age 12 Years or Older at Start of Measurement Period"
  and exists ("Qualifying Encounter for Depression Screening")
```

Denominator

```
define "Denominator";
  "Initial Population"
```

Denominator Exclusions

```
define "Denominator Exclusions";
  "Has Diagnosis of Bipolar Starting Before Qualifying Encounter"
  or "Has Diagnosis of Depression Starting Before Qualifying Encounter"
```

Numerator

```
define "Numerator";
  ("Patient Age 12 to 17 Years at Start of Measurement Period"
  and ("Most Recent Adolescent Depression Screening
  Negative" is not null
  or "Follow up for Positive Adolescent Depression Screening"
  ))
  or ("Patient Age 18 Years or Older at Start of Measurement Period"
```

Cypress Certification Patient Test Record: Brian Cross

Patient	Brian Cross	Sex	
Date of birth		Date of expiration	
Race		Ethnicity	
Insurance Providers		Patient IDs	5d52d41066105ea054a85579 Cypress
Contact info			

QDM::Diagnosis

Depression diagnosis

Codes:
ICD10CM: F34.1
SNOMEDCT: 78667006

Time Elements:
Prevalence Period Start: 2017-05-31T08:30:00.000Z

Other Fields:
Depression diagnosis

Codes:
SNOMEDCT: 14183003
ICD10CM: F32.0

Time Elements:
Prevalence Period Start: 2018-02-26T08:00:00.000Z

Other Fields:

QDM::EncounterPerformed

Depression Screening Encounter Codes

Codes:
CPT-99205

Software Update

Cypress 5 Releases

- **Cypress v5 Alpha**
 - Released May 23, 2019
 - Includes CVU+ features and Annual Update Measures posted May 13, 2019
 - Posted on resource center: <https://ecqi.healthit.gov/>
 - Available as a virtual machine (VM) download

- **Cypress v5 Beta**
 - June 20, 2019
 - Available as a VM download

- **Cypress v5 Official Release**
 - **July 25, 2019**
 - Available as a VM, AMI, and on the demo server: cypress.healthit.gov

Software Update

Cypress v5 Release

- <https://www.healthit.gov/cypress/release.html#5.0.0>

Download Cypress v5.0.0 | www.healthit.gov/STU | HealthIT.gov

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Cypress Releases

- [5.0.0 Patch](#)
- [4.0.3 Patch](#)
- [4.0.2 Patch](#)
- [4.0.1 Patch](#)
- [4.0.0](#)

Cypress Bundle Releases

- [2019.0.1 Bundle](#)
- [2018.1.0 Bundle](#)
- [2018.0.1 Bundle](#)

Retired Releases

- [Retired Releases](#)

Cypress v5.0.0

Cypress v5.0 with the fully integrated Cypress Validation Utility + Calculation Check (CVU+) is now available to support 2015 Edition Certification for the Office of the National Coordinator for Health Information Technology Certification Program for electronic clinical quality measures (eCQM). Cypress v5.0 supports testing the Eligible Hospital/Critical Access Hospital eCQMs and Eligible Professional/Eligible Clinician eCQMs updated for calendar year 2020 reporting.

Cypress v5.0 Features

- Supports the §170.315(c)(1), §170.315(c)(2), §170.315(c)(3), and §170.315(c)(4) certification criteria.
- Supports validation with Health Level Seven International (HL7) Clinical Document Architecture (CDA®) R2 Implementation Guide: Quality Reporting Document Architecture (QRDA) I, Release 1, Standard for Trial Use (STU) Release 5.1 - US Realm.
- Supports validation with HL7 Clinical Document Architecture (CDA®) R2 Implementation Guide: QRDA III, Release 1, STU Release 2.1 - US Realm.
- Supports the eCQMs for eReporting for the 2019 Reporting Period.
- Supports eCQM Value Sets as of 5/10/2019.

Cypress Validation Utility + Calculation Check (CVU+) Features

- Supports validation with the CMS Implementation Guide for QRDA Category I - Implementation Guide for 2020.
- Supports validation with the CMS Implementation Guide for Quality Reporting Document Architecture Category III - Implementation Guide for 2020.
- Supports multi-measure tests, allowing vendors to test eCQM calculations with a single test deck across multiple measures.
- Supports code system preference, allowing vendors to choose preferences for the code systems to be used in test patients.
- Supports developer-generated test patients, allowing vendors to supplement Cypress test patients with their own test patients to increase eCQM logic/code coverage.
- Evaluates the rigor of a set of test patients.

Software Update

CVU Standalone

- **CVU no longer available as a standalone application**
 - 2020 reporting period measures and moving forward
 - Functionality subsumed by CVU+
- **CVU+**
 - Can utilize validation logic through creating a CVU+ product
 - Tests for CVU+ products include CMS Program Tests which will run program-specific validations
- **Validation for 2019 reporting period**
 - CVU is still available as a standalone application for 2019 reporting period
 - CVU is available with Cypress 4.0.3 as a VM, AMI, or through Chef installation

Cypress Versions

Version	Dates	Measures Supported
V4.0.3	May 2, 2019	Latest version supporting eCQMs for the 2019 Reporting/Performance Period and CQL. Fixes record sample and other 4.0.2 bugs.
V5.0.0	July 25, 2019	Latest version supporting eCQMs for the 2020 Reporting/Performance Period and CQL.

Bundle Version	Dates	Features
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.
2019.0.1	July 25, 2019	Cypress v5 only CQL-based measures released in 2019 for the 2020 reporting year eCQM Value Sets as of 5/10/2019.

OPEN DISCUSSION

Next Cypress Tech Talk

- Tuesday, August 27, 2019 at 1pm ET
- To join online, visit:
<https://meetings.cms.gov/orion/joinmeeting.do?MTID=98271705d4bc4ad148cf1e39d5c7408>
- 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 Tech Talks 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://oncprojecttracking.healthit.gov/support/browse/CYPRESS>