

Cypress™

Cypress Tech Talk

May 31, 2022



MITRE

The Office of the National Coordinator for
Health Information Technology



Agenda

- Software Updates
 - Cypress 7.0.0
 - eCQM Specifications for 2023 Reporting/Performance Period
 - Cypress 6.3.0
- Recent Issue
 - Cypress Known Issues Dashboard
- Cypress Versions
- Open Discussion
- Contact Information

*See the Glossary at the back for definitions of terms

Software Updates

Cypress 7.0.0 (2023 Annual Update)

■ Cypress 7.0.0

- For the 2023 Reporting and Performance Period
- Release will be 2022 and 2023 compatible
- 2022 bundle (for the 2023 reporting period) can be loaded alongside the the 2021 bundle (for the 2022 reporting period)

■ Release Schedule

- Release Candidate was made available as a VM (Virtual Machine) May 19, 2022
- Final Release will be available in all release formats June 23, 2022
 - Note: There will not be an upgrade path from Cypress v6 to Cypress v7

eCQM Specifications for 2023 Reporting/Performance Period

- **On May 5, 2022, CMS posted the eCQM specifications for the 2023 reporting/performance period to the eCQI Resource Center.**
 - 6 new eCQMs have been included
- **49 Eligible Clinician eCQMs**
 - CMS951v1 (Kidney Health Evaluation)
- **11 Eligible Hospital / Critical Access Hospital eCQMs**
- **4 Pre-rulemaking eCQMs**
 - CMS334v4 (Cesarean Birth)
 - CMS819v1 (Global Malnutrition Composite Score)
 - CMS986v1 (Hospital Harm - Opioid-Related Adverse Events)
 - CMS1028v1 (Severe Obstetric Complications)
- **2 Hybrid eCQMs**
- **1 Outpatient Quality Reporting eCQMs**
 - CMS996v3 (Appropriate Treatment for ST-Segment Elevation Myocardial Infarction (STEMI) Patients in the Emergency Department (ED))

Cypress 6.3.0

- **Released on May 5th 2022.**
- **Supports testing with the 2021 Bundle for the 2022 Reporting Period**
- **Includes all feature improvements and bug fixes to be included in Cypress v7:**
 - Allow for import of Vendor Patients without demographics specified ([Cypress-2351](#))
 - Tailor CVU+ measure warnings to selected program ([Cypress-2348](#))
 - Align Vendor Patient totals ([Cypress-2346](#))
 - Support verification of multiple NPI/TIN combinations in CVU+ ([Cypress-2345](#))
 - Improve calculations with negated valuesets ([Cypress-2342](#))
 - Cypress API enhancements ([Cypress-2319](#))
 - Display Core Clinical Data Elements for patients with multiple episodes of care ([Cypress-2301](#))
 - Provide notification for CVU+/Vendor Patient uploads when QRDA files are missing in zip file
 - Provide sorting/pagination for user list
 - Provide indicator in Report when all tests are passing
 - Autofill Direct Reference Codes for C1 Record Sample Tests
- **Note: will not support testing with the 2022 Bundle for the 2023 Reporting Period**

Allow for import of Vendor Patients without demographics specified

```
<patient>
  <name>
    <given>Ann</given>
    <family>Payne</family>
  </name>
  <administrativeGenderCode nullFlavor="UNK"/>
  <birthTime value="19971002150000"/>
  <raceCode nullFlavor="UNK"/>
  <ethnicGroupCode nullFlavor="UNK"/>
  <languageCommunication>
    <templateId assigningAuthorityName="HITSP/C83" root="2.16.840.1.113883.3.88.11.83.2"/>
    <templateId assigningAuthorityName="IHE/PCC" root="1.3.6.1.4.1.19376.1.5.3.1.2.1"/>
    <languageCode code="eng"/>
  </languageCommunication>
</patient>
```

Measure Information

	IPOP	DENOM	NUMER	NUMEX	DENEX	DENEXCI
CMS2v11 - PopulationSet 1	●	●	○	○	○	○
View Logic Highlighting						
CMS22v10 - PopulationSet 1	2 ●	2 ●	○	○	○	○
View Logic Highlighting						
CMS69v10 - PopulationSet 1	●	●	○	○	●	○
View Logic Highlighting						
CMS349v4 - PopulationSet 1	●	●	○	○	○	○
View Logic Highlighting						

Select Measure(s) ▼

Cypress Certification Patient Test Record: Ann Payne

Patient	Ann Payne	Sex	-
Date of birth	1996-10-01T15:00:00+00:00	Date of expiration	None
Race	-	Ethnicity	-
Insurance Providers	2 - MEDICAID	Patient IDs	62470b01c1c388eb7ce384c Cypress
Address	202 Burlington Rd. Bedford, MA 01730 US	Telecom	(HP) 555-555-2003
QDM::Diagnosis			
Codes:			
SNOMEDCT: 47200007 - High risk pregnancy (finding)			
ICD10CM: O10.011 - Pre-existing essential hypertension complicating pregnancy, first trimester			

Tailor CVU+ measure warnings to selected program

- HL7 QRDA III Test would warn that measure ids are missing for CMS111 and CMS66

Errors and Warnings

✖ CMS68v11_62471edfc1c388... 6

CMS68v11_62471edfc1c3881931c55eff.debug.xml - 6 errors and warnings

[View Uploaded XML with Errors](#)

Errors (4)

Warnings (2)

Warning message

[Go To in XML](#)

Document does not state it is reporting measure CMS111v10

Document does not state it is reporting measure CMS66v10

- Since CMS111 and CMS66 are not part of the PCF program, those warnings would not be reported for the CVU+ PCF test

✖ PCF APM Entity Identifier not complete

Errors and Warnings

✖ CMS68v11_62471edfc1c388... 7

CMS68v11_62471edfc1c3881931c55eff.debug.xml - 7 errors and warnings

[View Uploaded XML with Errors](#)

Errors (7)

Warnings (0)

Error message

[Go To in XML](#)

Reported Measurement Period should start on 20220101

Reported Measurement Period should end on 20221231

Align Vendor Patient totals

CMS68v11 - PopulationSet 1 Patients

[View Patient Analytics](#)

☐ Select All

Show **10** entries

Select	Patient Name	DOB	Gender	Last Updated	IPOP	DENOM	NUMER	DENEXCEP
<input type="checkbox"/>	Ann Payne	October 1, 1996		a second ago	2	2		
	Total			2	2			

Previous **1** Next

CMS68v11 - PopulationSet 1 Patients

[View Patient Analytics](#)

☐ Select All

Show **10** entries

Select	Patient Name	DOB	Gender	Last Updated	IPOP	DENOM	NUMER	DENEXCEP
<input type="checkbox"/>	Ann Payne	October 1, 1996		2 minutes ago	2	2		
	Total				2	2		


Previous **1** Next

Support verification of multiple NPI/TIN combinations in CVU+


Validated in QRDA	Data Criteria	Description	CMS IG Conformance Statement Reference	Recorded Value in Health IT
	CMS EHR Certification ID	For PCF, all QRDA III files must include a CMS EHR Certification ID. Nulls will not be allowed.	(CONF:CMS_85)	<input type="text"/>
✓ (_62470cb1c1c3889374bdeb24.debug.xml)	Tax Identification Number	For PCF: it must contain at least one performer, each performer contains one TIN and one NPI	(CONF:3338-18190)	123456789,987654321
	National Provider Identification number	For PCF: it must contain at least one performer, each performer contains one TIN and one NPI	(CONF:3338-18247)	<input type="text"/>
	PCF APM Entity Identifier	This is the PCF APM Entity Identifier assigned to the PCF practice site.	(CONF:CMS_101)	<input type="text"/>

Cypress API enhancements

1) A user can specify “All EP” or “All EH” instead of providing an array of all the EP/EH measure ids when creating a new vendor

POST  /vendors/{id}/products

Create a new product for this vendor

 Secured by basic
This API supports Basic Authentication.

Request Response Security

URI Parameters

- Vendor ID: required (string)

Body

Type: application/json

Schema:

```
{
  "title": "Product",
  "id": "http://cypress.healthit.gov/schemas/product.json",
  "$schema": "http://json-schema.org/schema#",
  "type": "object",
  "properties": {
    "name": {"type": "string"},
    "version": {"type": "string"},
    "description": {"type": "string"},
    "bundle_id": {"type": "string"},
    "c1_test": {"type": "boolean"},
    "c2_test": {"type": "boolean"},
    "c3_test": {"type": "boolean"},
    "c4_test": {"type": "boolean"},
    "cures_update": {"type": "boolean"},
    "all_ep": {"type": "boolean"},
    "all_eh": {"type": "boolean"},
    "randomize_patients": {"type": "boolean"}
  }
}
```

2) Product Test details now include the provider details for the specific test

```
<measure_test>
  <name>Functional Status Assessment for Total Hip Replacement</name>
  <cms_id>CMS56v10</cms_id>
  <measure_id>2C928085-75AD-6D20-0175-AE82F4DE02DB</measure_id>
  <type>measure</type>
  <state>ready</state>
  <created_at>2022-03-28 16:50:15 UTC</created_at>
  <provider>
    <tin>032060001</tin>
    <npi>1842091252</npi>
    <ccn>273344</ccn>
    <name>Zachary Sutton</name>
  </provider>
  <link rel="self" href="/products/6241e747c1c3884ee8f0fdaa/product_tests/6241e747c1c3884ee8f0fdab"/>
  <link rel="tasks" href="/product_tests/6241e747c1c3884ee8f0fdab/tasks"/>
  <link rel="patients" href="/product_tests/6241e747c1c3884ee8f0fdab/patients"/>
</measure_test>
```

3) Product Details shows whether the test is for the 21st Century Cures Update

```
<product>
  <name>Test Product</name>
  <version/>
  <description/>
  <c1_test>true</c1_test>
  <c2_test>true</c2_test>
  <c3_test>true</c3_test>
  <c4_test>false</c4_test>
  <cures_update>true</cures_update>
  <randomize_patients>true</randomize_patients>
  <duplicate_patients>true</duplicate_patients>
  <measure_ids>
    <measure_id>2C928085-75AD-6D20-0175-AE82F4DE02DB</measure_id>
    <measure_id>2C928084-7545-FE85-0175-56D4788E0834</measure_id>
    <measure_id>2C928083-786E-690D-0178-7090965F028D</measure_id>
  </measure_ids>
  <created_at>2022-03-28 16:50:15 UTC</created_at>
  <updated_at>2022-03-28 16:51:47 UTC</updated_at>
  <link rel="self" href="/vendors/6241e714c1c3884ee8f0fda7/products/6241e747c1c3884ee8f0fdaa/product_tests"/>
  <link rel="product_tests" href="/products/6241e747c1c3884ee8f0fdaa/product_tests"/>
  <link rel="patients" href="/vendors/6241e714c1c3884ee8f0fda7/products/6241e747c1c3884ee8f0fdaa/patients"/>
</product>
```

Display Core Clinical Data Elements for patients with multiple episodes of care

IPOP

2

CMS529v2 - PopulationSet 1

[View Core Clinical Data Element](#)

Encounter - 1

FirstHeartRate (65 /min)

Encounter - 2

FirstHeartRate (65 /min)

FirstSystolicBloodPressure (140 mm[Hg])

FirstRespiratoryRate (9 /min)

FirstBodyTemperature (98.4 [degF])

FirstOxygenSaturation (95 %)

FirstBodyWeight (145 [lb_av])

FirstHematocritLab (45 %)

FirstWhiteBloodCellCount (6500 /mm3)

FirstPotassiumLab (5.3 meq/L)

FirstSodiumLab (141 meq/L)

FirstBicarbonateLab (25 meq/L)

FirstCreatinineLab (1.2 mg/dL)

FirstGlucoseLab (135 mg/dL)

QDM::EncounterPerformed

Codes:

SNOMEDCT: 183452005 - Emergency hospital admission (procedure)

Time Elements:

Relevant Period Start: 2020-08-18T09:15:00.000Z

Relevant Period End: 2020-08-19T09:15:00.000Z

Other Fields:

Length Of Stay: 1 d

Codes:

SNOMEDCT: 183452005 - Emergency hospital admission (procedure)

Time Elements:

Relevant Period Start: 2020-10-18T09:15:00.000Z

Relevant Period End: 2020-10-19T09:15:00.000Z

Other Fields:


Length Of Stay: 1 d

QDM::LaboratoryTestPerformed

Provide notification for CVU+/Vendor Patient uploads when QRDA files are missing in zip file

Results

Most Recent - Upload 1 of 1 (passing) ▾[Refresh View](#)

 **Passed**

Test Date: April 1, 2022 11:38am
Files Uploaded:
CMS529v2_62471258c1c3889374bdeb78.debug_2.zip
Total Test Executions: 1

Missing or Duplicate Files

- ✕ No QRDA files found. Make sure files are not in a nested folder.

Warnings

Provide sorting/pagination for user list

Application Settings **User Management** Bundles Application Status

Show 10 entries

Email	Role	Approved	Assignments
user9@test.com	user	true	Edit User
user8@test.com	user	true	Edit User
user7@test.com	user	true	Edit User
user6@test.com	user	true	Edit User
user5@test.com	user	true	Edit User
user4@test.com	user	true	Edit User
user3@test.com	user	true	Edit User
user2@test.com	user	true	Edit User
user1@test.com	user	true	Edit User
user10@test.com	user	true	Edit User

Previous 1 2 Next

Provide indicator in Report when all tests are passing

C1 - Capture and Export

C1 Record Sample

Added indentations

CMS133v10 Percentage of cataract surgeries for patients aged 18 and older with a diagnosis of uncomplicated cataract and no significant ocular conditions impacting the visual outcome of surgery and had best-corrected visual acuity of 20/40 or better (distance or near) achieved in the operative eye within 90 days following the cataract surgery

Description	Attribute
✓ Physical Exam, Performed: BestCorrectedVisualAcuityExamUsingSnellenChart	result
✓ Procedure, Performed: CataractSurgery	relevantPeriod
✓ Patient Characteristic Sex: ONCAAdministrativeSex	
✓ Patient Characteristic Birthdate: Birth date	birthDatetime

All C1 Measure Tests passing without errors or warnings

C2 - Import and Calculate

All C2 Measure Tests passing without errors or warnings

All passed message

C3 - Submission

All C3 Measure Tests passing without errors or warnings

C4 - Filtering

All C4 Filtering tests passing without errors or warnings

Autofill Direct Reference Codes for C1 Record Sample Tests

Edit Test

CMS68v11 Percentage of visits for eligible clinician attests to documenting a list of current medications

Validated in QRDA Data Criteria

Recorded Code/Attribute Value

Selected negated valueset

Documentation

Valuesets Negate entire Valueset

QDM::ProcedurePerformed

Attributes negationRationale

Medical Reason

2.16.840.1.113883.3.526.3.1007

Attribute code

Valuesets

Documentation of current medications (procedure)

Code

428191000124

QDM::InterventionPerformed

Attributes relevantPeriod

Recorded result

List of codes

Filter codes

Documentation of current medications (procedure): 428191000124101

Close

Recent Issue

Cypress Known Issues Dashboard

- <https://oncprojecttracking.healthit.gov/support/secure/Dashboard.jspa?selectPageId=18000>
- The dashboard collects all labeled known issues in one place, sorted by Cypress version
- Easily navigate to the dashboard from the Cypress summary page

Filter Results: Cypress Known Bugs 6.2.0			
Summary	2022 Performance Period EP/EC eCQMs	2022 Reporting Period EH/CAH eCQMs	Solution
QDM::InterventionPerformed failing for Certification C1 Record Sample for some measures in 6.2.2			A Cypress 6.2.2.1 patch (https://www.healthit.gov/cypress/release.html#6.2.2.1) has been made available to address this issue. It can be applied to any version of Cypress v6.
Cypress 6.2.2 Introduces author templateId restrictions but provides malformed documents			A Cypress 6.2.2.1 patch (https://www.healthit.gov/cypress/release.html#6.2.2.1) has been made available to address this issue. It can be applied to any version of Cypress v6.
[Cypress 6.2.0] Full Test Deck Download Fails After Updating To 6.2.0			Re-running the update script should fix this issue. https://github.com/projectcypress/cypress/wiki/Cypress-6.x-Upgrade-Instructions
1-3 of 3			

Cypress Versions

Version	Dates	Measures Supported
V6.2.2	September 23, 2021	Full support for the 2022 reporting/performance period eQMs adding released CMS QRDA III IG. Strict enforcement of Author templateIds
V6.2.2.1	October 5, 2021	Patch to address Known Issues 2305 and 2307
V6.3.0	May 5, 2022	

Bundle Version	Dates	Features
2020.0.5	February 19, 2021	Cypress v6 only Calculations for Master Patient List updated to reflect updated guidance for Relevant dateTime/Relevant Period and addresses issues with time zone offsets.
2021.0.2	June 24, 2021	Cypress v6 only Measures and patients released in 2021 for the 2022 reporting year.

OPEN DISCUSSION

Next Cypress Tech Talk

- Tuesday, June 28, 2022 at 1pm ET
- To join online, visit: <https://global.gotomeeting.com/join/529898157>
- To join via phone, dial: 1-646-749-3122
- Meeting Number: 529 898 157
- Meeting link, as well as a calendar event file, available at:
 - <https://www.healthit.gov/cypress/techtalks.html>
- **Note: Cypress Tech Talks will now occur every 4 weeks**

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>

Glossary

- **API – Application Programming Interface**
- **CCDE – Core Clinical Data Elements**
- **CQL – Clinical Quality Language**
- **CVU – Cypress Validation Utility**
- **CVU+ – Cypress Validation Utility Plus Calculation Check**
- **EC – Eligible Clinician**
- **eCQM – Electronic Clinical Quality Measure**
- **EH – Eligible Hospital**
- **EP – Eligible Professional**
- **HL7 – Health Level Seven International**
- **IG – Implementation Guide**
- **QPP – Quality Payment Program**
- **QRDA – Quality Reporting Document Architecture**
- **UMLS – Unified Medical Language System**