

# Cypress™

## Cypress Tech Talk

May 3, 2022



**MITRE**

The Office of the National Coordinator for  
Health Information Technology



# Agenda

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- Software Updates
  - Cypress 7.0.0
  - 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)

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### ■ 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 2021 bundle (for the 2022 reporting period)

### ■ Release Schedule

- Release Candidate will be available as a VM (Virtual Machine) May, 19 2022
- Final Release will be available in all release formats June 23, 2022

# Cypress 6.3.0

- **Scheduled for release on May 5<sup>th</sup> 2022.**
- **Will support testing with the 2021 Bundle for the 2022 Reporting Period**
- **Will include 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						
<a href="#">View Logic Highlighting</a>						
CMS22v10 - PopulationSet 1	2	2				
<a href="#">View Logic Highlighting</a>						
CMS69v10 - PopulationSet 1						
<a href="#">View Logic Highlighting</a>						
CMS349v4 - PopulationSet 1						
<a href="#">View Logic Highlighting</a>						

Select Measure(s) ▼

## Cypress Certification Patient Test Record: Ann Payne

<b>Patient</b>	Ann Payne	<b>Sex</b>	-
<b>Date of birth</b>	1996-10-01T15:00:00+00:00	<b>Date of expiration</b>	None
<b>Race</b>	-	<b>Ethnicity</b>	-
<b>Insurance Providers</b>	2 - MEDICAID	<b>Patient IDs</b>	62470b01c1c388eb7ce384c Cypress
<b>Address</b>	202 Burlington Rd. Bedford, MA 01730 US	<b>Telecom</b>	(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)	<input type="text" value="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 21<sup>st</sup> 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	<a href="#">Edit User</a>
user8@test.com	user	true	<a href="#">Edit User</a>
user7@test.com	user	true	<a href="#">Edit User</a>
user6@test.com	user	true	<a href="#">Edit User</a>
user5@test.com	user	true	<a href="#">Edit User</a>
user4@test.com	user	true	<a href="#">Edit User</a>
user3@test.com	user	true	<a href="#">Edit User</a>
user2@test.com	user	true	<a href="#">Edit User</a>
user1@test.com	user	true	<a href="#">Edit User</a>
user10@test.com	user	true	<a href="#">Edit User</a>

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

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

**Validated in QRDA**   **Data Criteria**

**List of codes**

Filter codes

Documentation of current medications (procedure): 428191000124101

**Valuesets**   **Negate entire Valueset**

QDM::ProcedurePerformed

**Attributes**   **negationRationale**   **Medical Reason**   **Attribute code**

2.16.840.1.113883.3.526.3.1007

**Valuesets**   **Code**

Documentation of current medications (procedure)   428191000124

QDM::InterventionPerformed

**Attributes**   **relevantPeriod**   **Recorded result**

Recorded Code/Attribute Value

Selected negated valueset

Documentation

## 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 ( <a href="https://www.healthit.gov/cypress/release.html#6.2.2.1">https://www.healthit.gov/cypress/release.html#6.2.2.1</a> ) 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 ( <a href="https://www.healthit.gov/cypress/release.html#6.2.2.1">https://www.healthit.gov/cypress/release.html#6.2.2.1</a> ) 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. <a href="https://github.com/projectcypress/cypress/wiki/Cypress-6.x-Upgrade-Instructions">https://github.com/projectcypress/cypress/wiki/Cypress-6.x-Upgrade-Instructions</a>
1-3 of 3			

# Cypress Versions

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

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



# OPEN DISCUSSION

# Next Cypress Tech Talk

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- Tuesday, May 30, 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

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- **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](mailto:project-cypress-talk@googlegroups.com)
- **Report bugs and issues to the Cypress JIRA at**
  - <https://oncprojecttracking.healthit.gov/support/browse/CYPRESS>

# Glossary

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- **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**