Cypress™

Cypress Tech Talk

May 31, 2022

© 2021 The MITRE Corporation. All rights reserved. Approved for Public Release; Distribution Unlimited. Case Number 16-3054
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 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
Software Updates

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
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_62471edfc1c3881931c55eff.debug.xml - 6 errors and warnings

  View Uploaded XML with Errors

  Errors (4)  Warnings (2)

  Warning message
  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

  Errors and Warnings
  CMS68v11_62471edfc1c3881931c55eff.debug.xml - 7 errors and warnings

  View Uploaded XML with Errors

  Errors (7)  Warnings (0)

  Error message
  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

<table>
<thead>
<tr>
<th>Select</th>
<th>Patient Name</th>
<th>DOB</th>
<th>Gender</th>
<th>Last Updated</th>
<th>IPO</th>
<th>DENOM</th>
<th>NUMER</th>
<th>DENEXCEP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ann Payne</td>
<td>October 1, 1996</td>
<td></td>
<td>a second ago</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### CMS68v11 - PopulationSet 1 Patients

#### View Patient Analytics

<table>
<thead>
<tr>
<th>Select</th>
<th>Patient Name</th>
<th>DOB</th>
<th>Gender</th>
<th>Last Updated</th>
<th>IPO</th>
<th>DENOM</th>
<th>NUMER</th>
<th>DENEXCEP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ann Payne</td>
<td>October 1, 1996</td>
<td></td>
<td>2 minutes ago</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

© 2021 The MITRE Corporation. All rights reserved. Approved for Public Release; Distribution Unlimited. Case Number 16-3054
Support verification of multiple NPI/TIN combinations in CVU+

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

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

3) Product Details shows whether the test is for the 21st Century Cures Update.
Display Core Clinical Data Elements for patients with multiple episodes of care

<table>
<thead>
<tr>
<th>CMS529v2 - PopulationSet 1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>View Core Clinical Data Element</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>IPOP</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Encounter - 1</strong></td>
<td>FirstHeartRate (65 /min)</td>
</tr>
<tr>
<td><strong>Encounter - 2</strong></td>
<td>FirstHeartRate (65 /min)</td>
</tr>
<tr>
<td></td>
<td>FirstSystolicBloodPressure (140 mm[Hg])</td>
</tr>
<tr>
<td></td>
<td>FirstRespiratoryRate (9 /min)</td>
</tr>
<tr>
<td></td>
<td>FirstBodyTemperature (98.4 [degF])</td>
</tr>
<tr>
<td></td>
<td>FirstOxygenSaturation (95 %)</td>
</tr>
<tr>
<td></td>
<td>FirstBodyWeight (145 [lb_av])</td>
</tr>
<tr>
<td></td>
<td>FirstHematocritLab (45 %)</td>
</tr>
<tr>
<td></td>
<td>FirstWhiteBloodCellCount (6500 /mm3)</td>
</tr>
<tr>
<td></td>
<td>FirstPotassiumLab (5.3 meq/L)</td>
</tr>
<tr>
<td></td>
<td>FirstSodiumLab (141 meq/L)</td>
</tr>
<tr>
<td></td>
<td>FirstBicarbonateLab (25 meq/L)</td>
</tr>
<tr>
<td></td>
<td>FirstCreatinineLab (1.2 mg/dL)</td>
</tr>
<tr>
<td></td>
<td>FirstGlucoseLab (135 mg/dL)</td>
</tr>
</tbody>
</table>

**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

**QDM::LaboratoryTestPerformed**

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

Results

✅ Passed

Missing or Duplicate Files

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

Warnings

Most Recent - Upload 1 of 1 (passing)

Test Date: April 1, 2022 11:38am
Files Uploaded:
CMSS29v2_62471258c1c3889374bdeb78.debug_2.zip
Total Test Executions: 1
Provide sorting/pagination for user list

<table>
<thead>
<tr>
<th>Email</th>
<th>Role</th>
<th>Approved</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:user9@test.com">user9@test.com</a></td>
<td>user</td>
<td>true</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:user8@test.com">user8@test.com</a></td>
<td>user</td>
<td>true</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:user7@test.com">user7@test.com</a></td>
<td>user</td>
<td>true</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:user6@test.com">user6@test.com</a></td>
<td>user</td>
<td>true</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:user5@test.com">user5@test.com</a></td>
<td>user</td>
<td>true</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:user4@test.com">user4@test.com</a></td>
<td>user</td>
<td>true</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:user3@test.com">user3@test.com</a></td>
<td>user</td>
<td>true</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:user2@test.com">user2@test.com</a></td>
<td>user</td>
<td>true</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:user1@test.com">user1@test.com</a></td>
<td>user</td>
<td>true</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:user10@test.com">user10@test.com</a></td>
<td>user</td>
<td>true</td>
<td></td>
</tr>
</tbody>
</table>
Provide indicator in Report when all tests are passing

### C1 - Capture and Export

**C1 Record Sample**

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Physical Exam, Performed: BestCorrectedVisualAcuityExamUsingSnellenChart</td>
<td>result</td>
</tr>
<tr>
<td>✓ Procedure, Performed: CataractSurgery</td>
<td>relevantPeriod</td>
</tr>
<tr>
<td>✓ Patient Characteristic Sex: ONCAcademicSex</td>
<td></td>
</tr>
<tr>
<td>✓ Patient Characteristic Birthdate: Birth date</td>
<td>birthDateTime</td>
</tr>
</tbody>
</table>

**All C1 Measure Tests passing without errors or warnings**

### C2 - Import and Calculate

**All C2 Measure Tests passing without errors or warnings**

### 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
**Recent Issue**

**Cypress Known Issues Dashboard**

- [https://oncprojecttracking.healthit.gov/support/secure/Dashboard.jspa?selectPageId=18000](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

<table>
<thead>
<tr>
<th>Filter Results: Cypress Known Bugs 6.2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summary</strong></td>
</tr>
<tr>
<td>QDM::InterventionPerformed failing for Certification C1 Record Sample for some measures in 6.2.2</td>
</tr>
<tr>
<td>Cypress 6.2.2 introduces author templateId restrictions but provides malformed documents</td>
</tr>
<tr>
<td>[Cypress 6.2.0] Full Test Deck Download Fails After Updating To 6.2.0</td>
</tr>
</tbody>
</table>

1–3 of 3
# Cypress Versions

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

<table>
<thead>
<tr>
<th>Bundle Version</th>
<th>Dates</th>
<th>Features</th>
</tr>
</thead>
</table>
| 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](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](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