

# Cypress™

## Cypress Tech Talk

October 18, 2022



**MITRE**

The Office of the National Coordinator for  
Health Information Technology



**CMS**  
CENTERS FOR MEDICARE & MEDICAID SERVICES

# Agenda

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- Software Updates
  - Cypress 7.0.3
- 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 (2023 Annual Update)

- **Cypress 7.0.3**
  - Scheduled for release on October 20<sup>th</sup> 2022.
- **Will include the following feature improvements and bug fixes:**
  - Display expected QRDA Version to be submitted on upload pages.
  - Results of type Physical Quantity with a value of 0.0 were evaluating as non-existent results. ([CYPRESS-2406](#))
  - CMS\_0084 is no longer an error for 2023 QRDA Category I reporting. ([CYPRESS-2411](#))
  - Cypress occasionally would make tests decks without any IPP patients for hybrid measures. ([CYPRESS-2415](#))
  - Cypress will maintain consistent ids for QRDA files of duplicate patients. ([CYPRESS-2416](#))
  - Cypress was not calculating CMS69 for Vendor Patients. ([CYPRESS-2419](#))
  - Cypress was not escaping annotations in units of measure when comparing expected and reported values. ([CYPRESS-2420](#))
  - Cypress was including negated valuesets unrelated to eCQM calculation. ([CYPRESS-2428](#))
  - QRDA R5.2 Device Applied templates with a performers specified were failing import. ([CYPRESS-2430](#))
  - Support code mapping of SNOMED CT code 254292007 for CMS129v11. ([CYPRESS-2434](#))
  - Report Integer values in QRDA using INT instead of PQ ([CQLIT-335](#))
- **Bundle 2022.1.1 Updates**
  - 9 Patients updated to remove cross-walking codes impacting CMS334 ([CYPRESS-2427](#))
  - CMS1028v1 and CMS334v4 are no longer grouped with 'pre-rulemaking' eCQMs.

## Software Updates

# Display expected QRDA Version to be submitted on upload pages.

### 2 Upload Files

Upload results from the EHR system in the form of a **QRDA Category III (R1)** XML document to get test results. This will automatically run a test execution.

Select file

MultiMeasureTest **CMSProgramTest**

Test Name	Quick Upload	Last Updated
HQR_PI Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
HQR_IQR Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
HQR_PI_IQR Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
HQR_OQR Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
MIPS_GROUP Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
MIPS_INDIV Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
MIPS_VIRTUALGROUP Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
MIPS_APMENTITY Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
MIPS_APP1_INDIV Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
MIPS_APP1_GROUP Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
MIPS_APP1_APMENTITY Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
PCF Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
HL7 Cat I (STU 5.3) Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29
HL7 Cat III (R1) Test	<a href="#">start</a> <a href="#">upload</a>	🕒 on Sep 29

## Software Updates

# Results of type Physical Quantity with a value of 0.0

- Results of type Physical Quantity with a value of 0.0 were evaluating as non-existent results.

```
<entryRelationship typeCode="REFR">
  <observation classCode="OBS" moodCode="EVN">
    <templateId extension="2015-08-01" root="2.16.840.1.113883.10.20.22.4.2"/>
    <templateId extension="2019-12-01" root="2.16.840.1.113883.10.20.24.3.87"/>
    <id extension="LABP:demo-girda01_12097_243314_1:10508-0" root="1.3.6.1.4.1.115"/>
    <code code="10508-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
    <statusCode code="completed"/>
    <effectiveTime value="20220101000000"/>
    <value unit="ng/mL" value="0" xsi:type="PQ"/>
  </observation>
</entryRelationship>
```

### ▲ Most Recent PSA Test Result is Low

```
( Last(["Laboratory Test, Performed": "Prostate Specific Antigen Test"] PSATest
  with "Most Recent Prostate Cancer Staging Tumor Size T1a to T2a" MostRecentProstateCancerStaging
  such that Global."NormalizeInterval"(PSATest.relevantDatetime, PSATest.relevantPeriod)starts before Global."NormalizeInterval"
(MostRecentProstateCancerStaging.relevantDatetime, MostRecentProstateCancerStaging.relevantPeriod)
  sort by start of Global."NormalizeInterval"(relevantDatetime, relevantPeriod)
)) LastPSATest
return LastPSATest.result < 10 'ng/mL'
```

## Software Updates

# *CMS\_0084 is no longer an error for 2023 QRDA Category I reporting*

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- **Cypress was still reporting this error for the hybrid measures for 2023 reporting**

Errors (1)

Warnings (0)

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**Error message**

**Go To in XML**

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CMS\_0084 - QRDA files for hybrid measure/CCDE submissions must contain a HICN or MBI.

## Software Updates

# Cypress occasionally would make tests decks without any IPP patients

### CMS529v3 - PopulationSet 1 Patients

Patient Name	Template Name	DOB	Gender	IPOP
Becky Carpenter	cms529 5	December 16, 1942	Female	
Charles Lee	cms529 3	December 31, 1942	Male	
Gertrude Rose	cms529 6	November 12, 1942	Female	
Jordan Brady	Z30 VTE	January 5, 1960	Male	
Linda Hudson	cms529 2	August 3, 1942	Female	
Lonnie Wells	Z4 DQ 1 Heart Adult	October 11, 1951	Male	
Luis Griffith	3 Virtual	October 3, 1966	Male	
Marjorie Buchanan	cms529 1	October 14, 1942	Female	
Regina Watkins	4 AMI	May 20, 1954	Female	
Ronnie Castro	4 Virtual	October 3, 1976	Male	
Sonia Brock	cms529 4	December 31, 1942	Female	
Stacy Thomas	Z21 Opiate BH Peds	May 18, 2005	Female	
<b>Total</b>				

## Software Updates

# Cypress will maintain consistent ids for QRDA files of duplicate patients.

```

1_Charles_Mckenzie.xml
<entry>
<act classCode="ACT" moodCode="EVN" negationInd="true">
<templateId extension="2021-08-01" root="2.16.840.1.113883.10.20.24.3.156"/>
<id extension="6349a36ddf4bd03b1eb4803" root="2.16.840.1.113883.10.20.24.3.156"/>
<!-- QDM Attribute: Category -->
<code nullFlavor="UNK"/>
<statusCode code="completed"/>
<effectiveTime>
</effectiveTime>
<!-- QDM Attribute: Author dateTime -->
<author>
</author>
<!-- QDM Attribute: Negation Rationale -->
<entryRelationship typeCode="RSON">
</entryRelationship>
<entryRelationship typeCode="REFR">
<observation classCode="OBS" moodCode="EVN">
<templateId extension="2017-08-01" root="2.16.840.1.113883.10.20.24.3.88"/>
<code code="77301-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="reason"/>
<statusCode code="completed"/>
<!-- QDM Attribute: Code -->
<value nullFlavor="NA" sdct:valueSet="2.16.840.1.113883.3.526.3.327" xsi:type="CD"/>
</observation>
</entryRelationship>
</act>
</entry>
<entry>
<act classCode="ACT" moodCode="EVN" negationInd="true">
<templateId extension="2021-08-01" root="2.16.840.1.113883.10.20.24.3.156"/>
<id extension="6349a376dfe4bd03b1eb4a8e" root="2.16.840.1.113883.10.20.24.3.156"/>
<!-- QDM Attribute: Category -->
<code nullFlavor="UNK"/>
<statusCode code="completed"/>
<effectiveTime>
</effectiveTime>
<!-- QDM Attribute: Author dateTime -->
<author>
</author>
<!-- QDM Attribute: Negation Rationale -->
<entryRelationship typeCode="RSON">
</entryRelationship>
<entryRelationship typeCode="REFR">
<observation classCode="OBS" moodCode="EVN">
<templateId extension="2017-08-01" root="2.16.840.1.113883.10.20.24.3.88"/>
<code code="77301-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="reason"/>
<statusCode code="completed"/>
<!-- QDM Attribute: Code -->
<value nullFlavor="NA" sdct:valueSet="2.16.840.1.113883.3.526.3.1283" xsi:type="CD"/>
</observation>
</entryRelationship>
</act>
</entry>

```

```

2_Chuck_Mckenzie.xml
<entry>
<act classCode="ACT" moodCode="EVN" negationInd="true">
<templateId extension="2021-08-01" root="2.16.840.1.113883.10.20.24.3.156"/>
<id extension="6349a36ddf4bd03b1eb4803" root="1.3.6.1.4.1.115"/>
<!-- QDM Attribute: Category -->
<code nullFlavor="UNK"/>
<statusCode code="completed"/>
<effectiveTime>
</effectiveTime>
<!-- QDM Attribute: Author dateTime -->
<author>
</author>
<!-- QDM Attribute: Negation Rationale -->
<entryRelationship typeCode="RSON">
</entryRelationship>
<entryRelationship typeCode="REFR">
<observation classCode="OBS" moodCode="EVN">
<templateId extension="2017-08-01" root="2.16.840.1.113883.10.20.24.3.88"/>
<code code="77301-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="reason"/>
<statusCode code="completed"/>
<!-- QDM Attribute: Code -->
<value nullFlavor="NA" sdct:valueSet="2.16.840.1.113883.3.526.3.327" xsi:type="CD"/>
</observation>
</entryRelationship>
</act>
</entry>
<entry>
<act classCode="ACT" moodCode="EVN" negationInd="true">
<templateId extension="2021-08-01" root="2.16.840.1.113883.10.20.24.3.156"/>
<id extension="6349a376dfe4bd03b1eb4a8e" root="1.3.6.1.4.1.115"/>
<!-- QDM Attribute: Category -->
<code nullFlavor="UNK"/>
<statusCode code="completed"/>
<effectiveTime>
</effectiveTime>
<!-- QDM Attribute: Author dateTime -->
<author>
</author>
<!-- QDM Attribute: Negation Rationale -->
<entryRelationship typeCode="RSON">
</entryRelationship>
<entryRelationship typeCode="REFR">
<observation classCode="OBS" moodCode="EVN">
<templateId extension="2017-08-01" root="2.16.840.1.113883.10.20.24.3.88"/>
<code code="77301-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="reason"/>
<statusCode code="completed"/>
<!-- QDM Attribute: Code -->
<value nullFlavor="NA" sdct:valueSet="2.16.840.1.113883.3.526.3.1283" xsi:type="CD"/>
</observation>
</entryRelationship>
</act>
</entry>

```



## Software Updates

# Annotations in units of measure

- Cypress was not escaping annotations in units of measure when comparing expected and reported values.

**Errors (1)**

Warnings (0)

**Error message****Go To in XML**

FirstWhiteBloodCellCount of [5000 /mm3] does not match [5000 {Cells}/mm3]

## Software Updates

# Cypress was including negated valuesets unrelated to eCQM calculation

### Data Criteria (QDM Data Elements)

- "Communication, Not Performed: Level of Severity of Retinopathy Findings" using "Level of Severity of Retinopathy Findings (2.16.840.1.113883.3.526.3.1283)"
- "Communication, Not Performed: Macular edema absent (situation)" using "Macular edema absent (situation) (SNOMEDCT Code 428341000124108)"
- "Communication, Not Performed: Macular Edema Findings Present" using "Macular Edema Findings Present (2.16.840.1.113883.3.526.3.1320)"

QDM::CommunicationPerformed
Diabetic Retinopathy <b>Codes:</b> NA_VALUESET: 2.16.840.1.113883.3.526.3.327 - Diabetic Retinopathy
<b>Time Elements:</b> Author Date/Time: 2021-03-07T08:30:00.000+00:00 Sent Date/Time: 2021-03-07T08:30:00.000+00:00
<b>Other Fields:</b> Negation Reason: 183932001 (SNOMEDCT) - Procedure contraindicated (situation)
Diabetic Retinopathy <b>Codes:</b> NA_VALUESET: 2.16.840.1.113883.3.526.3.1320 - Macular Edema Findings Present
<b>Time Elements:</b> Author Date/Time: 2021-03-07T08:30:00.000+00:00 Sent Date/Time: 2021-03-07T08:30:00.000+00:00
<b>Other Fields:</b> Negation Reason: 183932001 (SNOMEDCT) - Procedure contraindicated (situation)

## Software Updates

# Support code mapping of SNOMED CT code 254292007 for CMS129v11.

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- **CMS129v11 uses the Direct Reference Code 258232002 which has since been inactivated**

### Terminology

- code "Cancer staging (tumor staging)" ("SNOMEDCT Code (258232002)")
- 
- **Following the guidance in [CQM-5511](#), Cypress will allow vendors to report either the original code (258232002) per the eCQM spec or the mapped code (254292007).**

## Software Updates

# Report Integer values in QRDA using INT instead of PQ

### ▲ LastParity(Encounter "Encounter, Performed")

Last(["Assessment, Performed": "[#] Parity"] Parity  
 where Parity.relevantDatetime 42 weeks or less before PCMaternal."LastTimeOfDelivery"(Encounter)  
 and Parity.result is not null  
 sort by relevantDatetime  
 ).result as Integer

```
<entry>
  <observation classCode="OBS" moodCode="EVN">
    <!-- Assessment Performed -->
    <templateId extension="2021-08-01" root="2.16.840.1.113883.10.20.24.3.144"/>
    <id extension="6349a807dfe4bd041111edce" root="1.3.6.1.4.1.115"/>
    <code code="11977-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
    <text>[#] Parity</text>
    <statusCode code="completed"/>
    <effectiveTime value="20210502090000"/>
    <!-- QDM Attribute: Result -->
    <value unit="1" value="0.0" xsi:type="PQ"/>
  </observation>
</entry>
```

```
<entry>
  <observation classCode="OBS" moodCode="EVN">
    <!-- Assessment Performed -->
    <templateId extension="2021-08-01" root="2.16.840.1.113883.10.20.24.3.144"/>
    <id extension="633f1e53f9a0107e54f4f3af" root="1.3.6.1.4.1.115"/>
    <code code="11977-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
    <text>[#] Parity</text>
    <statusCode code="completed"/>
    <effectiveTime value="20230519090000"/>
    <!-- QDM Attribute: Result -->
    <value value="0" xsi:type="INT"/>
  </observation>
</entry>
```

## Software Updates

# 9 Patients updated to remove cross-walking codes impacting CMS334

- **Using Code 11466000** places the patient into the NUMER
- **Using Code 10745001** places the patient into the DENOM

QDM::ProcedurePerformed
<b>Codes:</b> SNOMEDCT: 46681009 - Cerclage of cervix during pregnancy by abdominal approach (procedure)
<b>Time Elements:</b> Relevant Date/Time: 2022-09-09T07:00:00.000+00:00
<b>Other Fields:</b> Rank: 1
<b>Codes:</b> SNOMEDCT: 10745001 - Delivery of transverse presentation (procedure) SNOMEDCT: 11466000 - Cesarean section (procedure)
<b>Time Elements:</b> Relevant Date/Time: 2023-06-10T05:00:00.000+00:00
<b>Other Fields:</b> Rank: 1

## 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 7.0.2			
Summary	2023 Performance Period EC eCQMs	2023 Reporting Period EH/CAH eCQMs	Solution
CQM129v11 - PSA score of 0 not qualifying for denominator			
"undefined method `collect' for nil:NilClass" Error when creating CVU+ product for CMS69v10	CMS69v11		see possible workaround below
Error of CMS_0084 encountered while testing Hybrid Measure			The error "CMS_0084 - QRDA files for hybrid measure/CCDE submissions must contain a HICN or MBI" should be treated as a Warning and not an Error.

1-3 of 3

# Cypress Versions

Version	Dates	Release Note
V6.3.0	May 5, 2022	Full support for the 2022 reporting/performance period
V7.0.2	August 4, 2022	Support for the 2023 CMS Implementation Guides for QRDA Category III
V7.0.3	October 20, 2022	Bug Fixes

Bundle Version	Dates	Features
2021.0.2	June 24, 2021	Measures and patients released in 2021 for the 2022 reporting year.
2022.1.0	July 11, 2022	Measures and patients released in 2022 for the 2023 reporting year. Required bundle for import into v7.0.1 and later
2022.1.1	October 20, 2022	Removed cross-walking codes impacting CMS334

# OPEN DISCUSSION



# Next Cypress Tech Talk

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- Tuesday, November 15, 2022 at 1pm ET
- To join online, visit: <https://mitre.zoomgov.com/j/1605680758>
- To join via phone, dial: 1-551-285-1373
- Meeting Number: 160 568 0758
- 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**