Agenda

- Software Updates
  - Cypress v6 Release
    - Community Suggested Features and Bug Fixes
- 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 v6 Release**

- **Final Cypress v6 release July 23, 2020**
  - HL7 QRDA Category 1 R5.2
  - 2021 CMS QRDA I Implementation Guide for Hospital Quality Reporting
  - 2021 CMS QRDA III Implementation Guide for Eligible Clinicians and Eligible Professionals
  - Support for 2021 reporting/performance period eCQMs
    - 9 EH/CAH eCQMs
    - 47 EP/EC eCQMs
    - 1 Hybrid eCQM (CMS529)
  - Continued and improved support for CVU+ testing
Software Updates
Community Suggested Features and Bug Fixes

- Calculation and import updates:
  - CYPRESS-1687: Bundle updates to avoid calculation discrepancies in contiguous US time zones
  - CYPRESS-2058: Unit of Measure validation for nullFlavor result
  - CYPRESS-2015: Warnings for improper QRDA-I file elements, especially time interval discrepancies

- User experience improvements:
  - CYPRESS-1374: Include all warnings in report as opposed to just errors
  - CYPRESS-1985: Fixed master patient filter so that it does not timeout
  - CYPRESS-2040: Update test result dropdown to fix inaccurate times

- HTML improvements:
  - CYPRESS-1958: Export all missing attributes in the HTML patient representation
  - CYPRESS-2034: Match patient IDs between QRDA and HTML patient files

- CVU+ and/or vendor patient updates:
  - CYPRESS-1961 and CYPRESS-2037: Sorting quantities fixed to sort by value rather than sorting as a string
  - CYPRESS-1980: Select All option for vendor patient page
  - CYPRESS-2042: Clarify instructions for HL7 CVU+ tests
  - CYPRESS-2051: Fix calculation issue for performance rates with denominator 0

- Features also included in latest v5:
  - ATL Request: Random address used for realistic test patient deduplication
  - Google Group Request: Record Sample tests show ‘incomplete’ instead of ‘failing’ status (also included in latest v5)
  - CYPRESS-1907: Improved color contrast (also included in latest v5)
**Software Updates**

**Calculation and Import Updates**

- **CYPRESS-1687**: Bundle updates to avoid calculation discrepancies in contiguous US time zones
  - Cypress shifts all patient data to UTC time (UTC-0). This sometimes causes calculation issues with certain patients if the vendor software operates in western US time zones.
  - In the latest bundle, adjustments have been made to patients with data near a day boundary so that the date does not change when shifting time zones. Updated times are midday so that they work with any time zone in the contiguous US.
  - This should prevent problems for users that shift to US times rather than UTC.

- **CYPRESS-2058**: Unit of Measure validation for nullFlavor result
  - Impacted CMS9v8 and CMS105v8.
  - If a result value was created with a nullFlavor, Cypress previously errored on the QRDA input.
  - Cypress now appropriately evaluates patient data with nullFlavor result values.
Software Updates
Calculation and Import Updates (cont.)

- **CYPRESS-2015**: Warnings for improper QRDA-I file elements, especially time interval discrepancies
  - Four new warning types: dual nullFlavor intervals, interval low after high, nullFlavor negated code without valueset, and string type value warnings.

import_warnings.xml - 10 errors and warnings

```
<!-- low and high both null warning -->
  ▼<effectiveTime>
    <low nullFlavor="UNK"/>
    <high nullFlavor="UNK"/>
  </effectiveTime>

<!-- low after high warning -->
  ▼<effectiveTime>
    <low value="20201006080000"/>
    <high value="20181006083000"/>
  </effectiveTime>

▼<observation classCode="OBS" moodCode="EVN" negationInd="true">
  <!-- Assessment Performed -->
  <templateId root="2.16.840.1.113883.10.20.24.3.144" extension="2019-12-01"/>
  <id root="1.3.6.1.4.1.115" extension="5ebe6ac66106e84b013612"/>
  <code nullFlavor="NA" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
```

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Software Updates
User Experience Improvements

- **CYPRESS-1374**: Include all warnings in report as opposed to just errors

```
C3 QRDA Category III Passing Measure Tests with Warnings
CMS2v10 Preventive Care and Screening: Screening for Depression and Follow-Up Plan
- Warnings
  - SHALL contain exactly one [1..1] templateId (CONF:CMS_1) such that it SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.27.1.2" (CONF:CMS_2).SHALL contain exactly one [1..1] @extension="2019-05-01" (CONF:CMS_3). (CMS2v10_5efe2268c1c388ac15576e69.debug_1_.xml)
```

- **CYPRESS-1985**: Fixed master patient filter so that it does not timeout

<table>
<thead>
<tr>
<th>Filter Patients</th>
<th>Annual Update Bundle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type to search by measure</td>
<td>Alpha bundle for the 2020 Re</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>DOB</th>
<th>Gender</th>
<th>IPOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z24 VTE</td>
<td>February 24, 1954</td>
<td>Male</td>
<td>1</td>
</tr>
<tr>
<td>A STROKE</td>
<td>March 7, 1943</td>
<td>Male</td>
<td>1</td>
</tr>
<tr>
<td>Z1 VTE</td>
<td>February 8, 1954</td>
<td>Male</td>
<td>1</td>
</tr>
<tr>
<td>S N ED</td>
<td>January 4, 1951</td>
<td>Female</td>
<td>1</td>
</tr>
<tr>
<td>2 ED</td>
<td>January 21, 2002</td>
<td>Female</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>5</strong></td>
</tr>
</tbody>
</table>
Software Updates
User Experience Improvements (cont.)

- **CYPRESS-2040**: Update test result dropdown to fix inaccurate times
  - All previous test runs were labelled with times to distinguish between test executions.
  - These times were labelled in UTC when they should be shown in the local time zone, so they appear to be off from the accurate time by the UTC offset.
  - Cypress shows these executions differently to not display the incorrect time.
Software Updates

HTML Improvements

- **CYPRESS-1958**: Export all missing attributes in the HTML patient representation
  - Several attributes representable in QRDA were not shown in the HTML exports for patients.
  - This was updated to support attributes such as participationPeriod, supply, requester, priority, methodCode, daysSupplied, and more.

```xml
   <entryRelationship typeCode="REFR">
     <supply classCode="SPLY" moodCode="EVN">
       <!-- Days Supplied -->
       <templateId root="2.16.840.1.113883.10.20.24.3.157" extension="2018-10-01"/>
       <id root="6fc75044-6dc4-4ef6-b1e4-736c951cdfe4"/>
       <quantity value="10" unit="d"/>
     </supply>
   </entryRelationship>
```

- **CYPRESS-2034**: Match patient IDs between QRDA and HTML patient files
  - Patient IDs in HTML files were previously different from the IDs used in the corresponding patient QRDA file. This has been fixed to match.
Software Updates
CVU+ and Vendor Patient Updates

- **CYPRESS-1961** and **CYPRESS-2037**: Sorting quantities fixed to sort by value rather than sorting as a string
  - Sorting results of type Quantity was previously done as a string comparison, rather than comparing the numeric quantities.
    - Example: “100 mmHg” would be considered to be less than (<) “80 mmHg”
  - Updated version compares the values (100 > 80) to determine order.
  - This doesn’t impact certification test patients, but it could impact calculation for CVU+ vendor patients.

- **CYPRESS-1980**: Select All option for vendor patient page
Software Updates
CVU+ and Vendor Patient Updates (cont.)

- **CYPRESS-2042**: Clarify instructions for HL7 CVU+ tests
  - When HL7 only tests were added to the CVU+ program test section, the test details continued to show CMS program instructions.
  - Updated test interface shows the simpler instructions for HL7 only tests.

![CMS Implementation Guide Checklist (HL7_Cat_III)](image)

![HL7 QRDA Category III Validation](image)
Software Updates
CVU+ and Vendor Patient Updates (cont.)

- **CYPRESS-2051**: Fix calculation issue for performance rates with denominator 0
  - For performance rates in QRDA-III documents, if the denominator has value 0, then the performance rate should be NA.
  - Previously, Cypress would give conflicting error messages showing that the performance rate should *not* be NA. Cypress now accepts the correct value or shows the correct error message as applicable.
  - This does not affect certification because no tests will have denominator with value 0.
Software Updates
Recent Features in Both v6 and v5

- Random address used for realistic test patient deduplication
  - Previously, Cypress created all patients with the same address.
  - Cypress creates patients with different addresses, where addresses will not be changed when duplicating patients.

```xml
<recordTarget>
  <patientRole>
    <id extension="5e9bdf19dfe4bd03bdf0fecf" root="1.3.6.1.4.1.115"/>
    <addr use="HP">
      <streetAddressLine>202 Burlington Rd.</streetAddressLine>
      <city>Bedford</city>
      <state>MA</state>
      <postalCode>01730</postalCode>
      <country>US</country>
    </addr>
    <telecom use="WP" value="tel:+1-781-271-3000"/>
  </patientRole>
</recordTarget>

<recordTarget>
  <patientRole>
    <id extension="5e9bdf19dfe4bd03bdf0fecf" root="1.3.6.1.4.1.115"/>
    <addr use="HP">
      <streetAddressLine>7478 Riverview Lane</streetAddressLine>
      <city>Massapequa</city>
      <state>NY</state>
      <postalCode>11758</postalCode>
      <country>US</country>
    </addr>
    <telecom use="WP" value="tel:+1-202-555-0165"/>
  </patientRole>
</recordTarget>
```
Software Updates
Recent Features in Both v6 and v5 (cont.)

- **C1 Record Sample tests “Incomplete” until first QRDA upload**
- **Before**

<table>
<thead>
<tr>
<th>View Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upload Results</td>
</tr>
<tr>
<td>Not Started</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Criteria Verification</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS2v9 Preventive Care and Screening: Screening for Depression and Follow-Up Plan</td>
<td>Failing</td>
</tr>
<tr>
<td>CMS22v8 Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented</td>
<td>Not Started</td>
</tr>
<tr>
<td>CMS69v8 Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up Plan</td>
<td>Not Started</td>
</tr>
</tbody>
</table>

- **After**

<table>
<thead>
<tr>
<th>View Results</th>
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<tbody>
<tr>
<td>CMS2v9 Preventive Care and Screening: Screening for Depression and Follow-Up Plan</td>
<td>Incomplete</td>
</tr>
<tr>
<td>CMS22v8 Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented</td>
<td>Not Started</td>
</tr>
<tr>
<td>CMS69v8 Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up Plan</td>
<td>Not Started</td>
</tr>
</tbody>
</table>
## Software Updates

Recent Features in Both v6 and v5 (cont.)

- **CYPRESS-1907**: Improved color contrast for expected results

### Before

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Template Name</th>
<th>DOB</th>
<th>Gender</th>
<th>IPOP</th>
<th>DENOM</th>
<th>NUMER</th>
<th>DENEX</th>
<th>DENEXCEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constance Johnston</td>
<td>Z32 Heart Adult</td>
<td>February 13, 1950</td>
<td>Female</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Rick Gregory</td>
<td>Z12 GP Adult</td>
<td>February 3, 1972</td>
<td>Male</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Laurie Fleming</td>
<td>Z17 GP Adult</td>
<td>March 20, 1969</td>
<td>Female</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

### After

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Template Name</th>
<th>DOB</th>
<th>Gender</th>
<th>IPOP</th>
<th>DENOM</th>
<th>NUMER</th>
<th>DENEX</th>
<th>DENEXCEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lewis Boyd</td>
<td>Z12 GP Adult</td>
<td>February 3, 1972</td>
<td>Male</td>
<td>●</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Erik Bates</td>
<td>Z13 N GP Adult</td>
<td>February 13, 1972</td>
<td>Male</td>
<td>●</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Toni Stevenson</td>
<td>B (Independent Risk Factors 4) Cancer</td>
<td>September 1, 1965</td>
<td>Female</td>
<td>●</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Carl Warren</td>
<td>A N BH Adult</td>
<td>January 1, 1978</td>
<td>Male</td>
<td>●</td>
<td>●</td>
<td>○</td>
<td>●</td>
<td></td>
</tr>
</tbody>
</table>
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
# Cypress Versions

<table>
<thead>
<tr>
<th>Version</th>
<th>Dates</th>
<th>Measures Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>V6 Alpha</td>
<td>May 21, 2020</td>
<td>Initial support for QRDA Category 1 R5.2 and 2021 reporting/performance period eCQMs.</td>
</tr>
<tr>
<td>V6.0.0</td>
<td>July 23, 2020</td>
<td>Support for QRDA Category 1 R5.2, Updated CMS IGs, and 2021 reporting/performance period eCQMs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bundle Version</th>
<th>Dates</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019.1.1</td>
<td>December 19, 2019</td>
<td><strong>Cypress v5 only</strong> CQL-based measures released in 2019 for the 2020 reporting year. Removed retired measures as announced on November 19, 2019.</td>
</tr>
<tr>
<td>V6 Alpha</td>
<td>May 21, 2020</td>
<td><strong>Cypress v6 only</strong> Initial CQL-based measures released in 2020 for the 2021 reporting year.</td>
</tr>
<tr>
<td>2020.0.1</td>
<td>July 23, 2020</td>
<td><strong>Cypress v6 only</strong> CQL-based measures released in 2020 for the 2021 reporting year.</td>
</tr>
</tbody>
</table>

*Cypress v4 and the 2018 bundle have been retired due to the end of the 2019 reporting period.

OPEN DISCUSSION
Next Cypress Tech Talk

- Tuesday, August 11, 2020 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
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

- 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