

# **MADiE User Group**

*June User Group*

*Hosted by ICF/SemanticBits*

*June 20<sup>th</sup>, 2024*



*MADiE is owned and operated under contract with CMS*

*Contracting Officer Representative (COR): Emmanuel Kalluri*

# Disclaimer

This meeting is being recorded to ensure notes and action items are captured accurately.

Attendees who have objections to the meeting being recorded are asked to let the facilitator know at this time

# Agenda and Objectives

## Agenda

1. MAT Updates
2. Bonnie Updates
3. MADiE Updates
4. Community Questions & Discussions
5. Review of Resources

## Objectives

- Inform MAT, Bonnie and MADiE users of current and planned activities
- Create a forum to gather community feedback on future enhancements
- Foster collaboration through open community discussion

# Measure Authoring Tool

MAT 6.11 QDM & FHIR

# Measure Authoring Tool: Current State

## MAT 6.11

- Maintenance Release occurred on 4/15/24
  - Banner on login screen notifying users of decommissioning June 28.
- Release Notes are available on the MAT web site under Training and Resources.
- QDM measures use version 1.5.12 of the CQL-ELM translator.
- FHIR measures use version 1.5.4 of the CQL-ELM translator.

# Measure Authoring Tool – Known Issues

## Known Issues:

1. For FHIR measures, when the same CQL definition is used in Supplemental Data Elements (SDE) and as a Risk Adjustment Variable (RAV), the measure is not able to be packaged. Users will receive an error for ‘duplicate id value’. The workaround is to create different definition(s) when they are needed in both SDE and RAV. ([BonnieMAT-1212](#))
2. For FHIR measures, if the CQL Editor is used to enter value sets, the value sets are validated each time the CQL is saved. If the value set name and OID are not a match to the VSAC a CQL error will display, and users may update the value set directly in the editor. When using the CQL Editor the ‘Update from VSAC’ button should not be used as this will display an ‘Unable to Process’ error message. This message does not prevent users from completing or saving work. They should continue to save their CQL to validate value sets in VSAC. ([BonnieMAT-1235](#)).

# Bonnie

Bonnie 4.3.2 QDM (Prior)

Bonnie 5.1.6 QDM

Bonnie 6.2.6 FHIR

# Bonnie Prior: Current State

## Bonnie 4.3.2 Prior

- Bonnie 4.3.2 Prior maintenance release occurred on 4/15/24
- Banner on login screen notifying users of decommissioning June 28.
- Supports QDM 5.5
- Users will receive a warning after 10 minutes of inactivity and logged out after 15 minutes



# Bonnie QDM: Current State

## Bonnie 5.1.6 QDM

- Bonnie 5.1.6 QDM maintenance release occurred on 4/15/24
- Banner on login screen notifying users of decommissioning June 28.
- Supports QDM 5.6
- Supports QDM/CQL and CQL 1.5
- Patient conversion functionality will remain disabled

# Bonnie FHIR: Current State

## Bonnie 6.2.6 FHIR

- Bonnie 6.2.6 FHIR maintenance release occurred on 4/15/24
- Banner on login screen notifying users of decommissioning June 28.

## Bonnie FHIR Attributes

- Attributes supported by Bonnie FHIR are linked on the Bonnie and MAT issue tracker on the summary page
- <https://oncprojecttracking.healthit.gov/support/projects/BONNIEMAT/summary>

# Bonnie - Known Issues

## Known Issues:

- For Bonnie QDM, the test case 'Save' function will freeze when users attempt to delete the Class attribute from a Data Element. [BONNIEMAT-1726](#)
- **Work around:** Delete the DataElement that includes the Class attribute and then re-add the DataElement without the Class attribute.
- The QRDA export is not correctly reflecting relevant date time. There is no workaround. We don't have plans to address this in Bonnie at this time.
- For Bonnie FHIR, measures that include stratification are not displaying properly for users to test. There is no workaround at this time. We don't have plans to address this in Bonnie at this time.
- For Bonnie Prior, test cases that include certain QDM attributes are preventing test case conversion from QDM to FHIR. The QDM attributes are PatientEntity, CarePartner, Practitioner and Organization. A workaround of removing these QDM attributes will allow the conversion to process. ([BONNIEMAT-1177](#))
- For Bonnie FHIR, the defaulted element/code combination for Malignant Intracranial Neoplasm (SNOMEDCT Code 109911004) prevents the user from saving the test case. If the code is updated to another SNOMEDCT code for this element, the test case can be saved and can, if desired, revert back to the defaulted SNOMEDCT Code 109911004 and not be prevented from saving the Test Case. ([BONNIEMAT-1485](#))

# 60 Day Account Deactivation

## Keeping your MADiE, MAT and Bonnie Accounts Active:

- In accordance with CMS and HHS security requirements, these tools have implemented an account deactivation policy for all users who have not logged in within the previous 60 days or more.
- Activity in at least one of the three Bonnie environments (every 60 days) is needed to keep accounts active.
- Users will receive warning messages after 30 days of inactivity.
- After 60 days of inactivity, accounts will be deactivated.
- To access deactivated MAT accounts again, users will need to request reactivation of their account by contacting the Help Desk.
  - **Do NOT** respond to the deactivation email. Send a new email to [semanticbits-mat-help@icf.com](mailto:semanticbits-mat-help@icf.com) to request reactivation of your MAT account.
- To access deactivated Bonnie accounts again, users will need to request reactivation of their account by contacting the Help Desk.
  - **Do NOT** respond to the deactivation email. Send a new email to [semanticbits-bonnie-help@icf.com](mailto:semanticbits-bonnie-help@icf.com) to request reactivation of your Bonnie account.
  - **\*\*Do not request a new account - to retain access to your measures and test cases you will need to request reactivation of your existing account.**
- To access a deactivated MADiE account again, users will need to request the MADiE role in HARP.
  - **Do NOT** respond to the deactivation email.

\*Keep your Bonnie, MAT and MADiE accounts active to continue to receive important email communications!

# Bonnie and MAT: Future State

## Bonnie and MAT Support:

- No Bonnie or MAT enhancements are planned at this time.
- Bonnie and MAT will continue to be available until the tools are decommissioned June 28th, 2024.
- Future MAT or Bonnie releases will be communicated to users during User Group, community and stakeholder meetings and via email communication.

# MADiE

MADiE 1.4.2

# MADiE: Current State (1 of 2)

## MADiE – 1.4.2 6/20/2024

- MADiE has been updated to allow users to select a column header that then will be used to sort test cases. In addition to the default sort by the creation date (newest to oldest), the test cases may now be sorted by Status, Group, Title and Description.
- **QDM Measures:** The export file Human Readable now displays the full name of the months for the measurement period. ([BONNIEMAT-1863](#))
- **QDM Measures:** MADiE now supports the ability for users to specify a Manifest to use with their measure's test case execution. ([BONNIEMAT-1376](#)) The Test Cases tab, Configuration section, has been updated to add an “Expansion” tab. The Expansion tab allows users to select the value set expansion to be used during execution using the following options:
  - **Latest** - this option uses the latest version of each value set available in VSAC  
**Note:** This option includes value sets in a draft status and with inactive codes.
  - **Manifest** - this option allows a user to select a specific manifest available in VSAC  
**Note:**
    - VSAC Draft Manifests include value sets in a draft status
    - VSAC Active Release Manifests do not support draft value sets
- **QI-Core Measures:** MADiE has been updated to store the test case Group, and Title and Description as part of the test case export so that it can be used on re-import to populate the group, and title and description fields instead of using the family and given fields from the JSON. ([BONNIEMAT-1844](#))
- **QI-Core Measures:** The following updates have been made to measure exports:
  - Resource IDs will use MADiE-generated UUIDs ([BONNIEMAT-1879](#))
  - References in the MeasureReport will use relative URLs instead of full URLs ([BONNIEMAT-1878](#))
- **QI-Core Measures:** Transaction type The test case exports will use PUT request instead of POST ([BONNIEMAT-1877](#))
- **QI-Core Measures:** MADiE has been updated to use LiquidBase Templates 0.4.3 based on QMIG profiles. More information can be found [here](#).

# MADiE Current State (2 of 2)

## MADiE – 1.4.1 6/5/2024

- **QDM Measures:** The following updates have been made to the human readable export file:
    - The data criteria section and the definitions section has been updated to display alphabetically. ([BONNIEMAT-1868](#) [BONNIEMAT-1885](#))
    - The population criteria stratification section now displays "None" if there is no stratification description entered for the measure. ([BONNIEMAT-1867](#))
    - The stratification sections now display an incremental number in each stratification label for measure containing multiple stratifications. ([BONNIEMAT-1883](#))
    - The following labels in the population criteria section now appear plural instead of singular: ([BONNIEMAT-1866](#))
      - Denominator Exclusions, Numerator Exclusions, Denominator Exceptions and Measure Population Exclusions
  - **QI-Core Measures:** When making edits on the Details tab, Name, Version & ID sub-tab, if the Measure CQL Library Name exceeds 64 characters the 'Save' button is disabled and updates cannot be made to the page. ([BONNIEMAT-1857](#))
  - Users were able to export a measure containing an invalid CQL Library Name. ([BONNIEMAT-1857](#))
  - **QDM Measures:** Stratification descriptions can't be added to measures that were transferred from the MAT. ([BONNIEMAT-1894](#))
  - **QI-Core Measures:** The criteriaReference ID contains a null value instead of containing the measurePopulation ID, affecting the Measure Observations expected and actual values. ([BONNIEMAT-1890](#))
  - **QDM Measures:** Users again have the ability to version measures. With this function being available again users no longer have the ability to re-transfer QDM measures from MAT to MADiE.
    - After the MADiE 1.4.1 release, QDM measures may be transferred from the MAT to MADiE one time (Note: this may be either an initial transfer or a retransfer from the MAT to MADiE.)
    - This would be the final transfer-users would not be able to transfer the measure from the MAT to MADiE a second time after the MADiE 1.4.1 release.
- IMPORTANT NOTE:**
- If a measure is versioned in MADiE after the MADiE 1.4.1 release prior to completing that one final transfer from the MAT to MADiE, that measure may NOT be transferred from the MAT to MADiE one final time as noted above.



# MADiE – Known Issues (1 of 5)

The Known Issues List will be posted and maintained on the [MADiE MVP tab](#) of the MAT public web site and the Summary page of the Bonnie MAT MADiE ONC Jira Issue Tracker here: <https://oncprojecttracking.healthit.gov/support/projects/BONNIEMAT/summary>

## CQL-ELM Translator Known Issues as of 6/20/24:

There is an issue in how reasonCode is getting mapped to ELM for the CommunicationNotDone datatype in QI-Core 4.1.1. Refer to the following GitHub ticket for more information on this issue: [https://github.com/cqframework/clinical\\_quality\\_language/issues/1153](https://github.com/cqframework/clinical_quality_language/issues/1153) [BONNIEMAT-1420](#)

## MADiE Known Issues as of 6/20/24:

- CQL Validation issues occur when a definition name is resolvable to a quoted identifier, but the definition name is not in quotations. Users may not receive CQL validation errors, however the Population Criteria section won't render, and a blank screen will display
  - **Work around:** Quotes should be added to all define statement names, even when resolvable to a quoted identifier.
- When users search for measure names and include special characters in the search criteria, the user may receive a 403 error, or the search results will not be returned.
  - **Work around:** Only include alpha numeric characters when searching for a measure.

# MADiE – Known Issues (2 of 5)

## MADiE Known Issues as of 6/20/24:

- Users will automatically be logged out of MADiE, MAT and Bonnie after 30 minutes of inactivity. If the user has more than one active session of MADiE, MAT or Bonnie in any combination (in different tabs in the same browser or in different browsers) and one of the sessions reaches 30 minutes of inactivity the session will expire, and the user will be logged out of all sessions. If the user is logged out prior to saving changes, any unsaved changes will not be retained when the user logs into MADiE, MAT or Bonnie again.
  - **Work around:** Users can keep all sessions active by clicking on the screen for each session periodically. Clicking on each active session prior to reaching 30 minutes of inactivity will prevent the sessions from expiring and prevent the user from being logged out of all sessions. [BONNIEMAT-1554](#) [BONNIEMAT-1623](#)
- **QDM Measures:** Status' date timing included in QDM test case JSON is not being saved after translation completes.
- **QI-Core Measures:** There is an issue in how some QI-Core profiles are being mapped to their related FHIR resource types for data requirements, resulting in missing data requirements in the measure export. [BONNIEMAT-1720](#)

# MADiE – Known Issues (3 of 5)

## MADiE Known Issues as of 6/20/24:

- Measures transferred from MAT to MADiE need to be reviewed in MADiE and the CQL updated (can just add a space to the CQL) after the transfer and prior to working with the measure (including working with test cases or exporting the measure). Until this step is complete you may see a CQL error notification on the Test Cases screen and/or during Measure Export.
- **QDM Measures:** When editing a MADiE test case that was imported from Bonnie QDM, if the test case description exceeds the allowable 250 characters, the 'Save' button is disabled and updates cannot be made to the test case.
  - **Work around:** Edit the MADiE test case description to less than 250 characters. [BONNIEMAT-1825](#)
- **QDM Measures:** The QRDA export for test cases does not unzip in Windows systems using the native Windows unzip program.
  - **Workaround:** Download and use 7-zip utility to unzip the files. [BONNIEMAT-1917](#)

# MADiE – Known Issues (4 of 5)

## MADiE Known Issues as of 6/20/24:

- **QDM Measures:** Users may experience unexpected behavior with the test case “Delete All” button.
  - The “Delete All” button will remain enabled after users delete all test cases.
  - The “Delete All” button will remain disabled after importing test cases.

**Workaround:** Refresh the page.
- **QDM Measures:** After importing test cases, an error will display on the test case list page: “An error occurred, please try again. If the error persists, please contact the help desk”.
  - **Work around:** Navigate to a different tab and then navigate back to the test case list page.

# MADiE – Known Issues (5 of 5)

## MADiE Known Issues as of 6/20/24:

- **QDM Measures:** Initially after users change the selected Manifest for test case execution, the test case results may display incorrect information.  
**Work around:** Refresh the page. The test case results will display correctly unless the Manifest is updated again, which can be resolved again by refreshing the page.
- **QDM Measures:** When users edit a test case, select “Run Test” and then select “Discard Changes” the Expected/Actual tab may display incorrect results as the results will revert to the last saved expected and actual values. The results displayed on the test case list page are not impacted.

# MADiE Resources

## MADiE

The [MADiE MVP tab](#) on the MAT public web site provides:

- Login button to MADiE
- User Access Guide – how to get your MADiE account
- User Guide – provides details regarding tool functionality
- MADiE In Depth Training Videos
- JSON Test Case Guide – steps for using the JSON test case editor
- Known Issues – updated regularly
- Release Notes – posted with each MADiE release
- MADiE Measure and Library Sharing Request Form v2.0 – to request measures (and the measure's test cases) or libraries to be shared – submitted by the owner via email
- MADiE Measure or Library Ownership Transfer Request Form v1.0 – to request transferring ownership of measures (and the measure's test cases) or libraries - form should be submitted by the owner via email
- MADiE Independent Testing Supplemental Guide\_v1.0

# MADiE Resources (continued)

## MADiE QI-Core Profile Examples

- The MADiE team has created a measure in MADiE with an included test case JSON bundle which contains entries for many QI-Core (v4.1.1) profiles.
- The purpose of this test case JSON bundle is to provide users the framework for commonly used QI-Core v4.1.1 profiles that can be leveraged with their own test case development.
- The measure (**QI-Corev4.1.1 Test Case Template**) is a blank measure (no CQL and no Population Criteria) with one test case (**QI-Corev4.1.1 Example Bundle version 2**).
- The QI-Core profiles examples in the JSON bundle are for guidance and are not intended to fulfill any measure or testing requirement. Updates to reflect the specific details of your test case will be necessary.
- Measure developers may copy any of the profiles from the QI-Corev4.1.1 Example Bundle version 2 test case directly to your test case(s) or use a source code editor (e.g., Notepad++ and Visual Studio Code) and make any updates needed to meet your testing needs.
- The MADiE Test Case JSON Guide, available on the [MADiE MVP tab](#) of the MAT public website, has been updated with detailed information regarding the **QI-Corev4.1.1 Example Bundle version** test case in MADiE and provides additional guidance for using this resource to aid MADiE users in updating or creating test cases in MADiE.

# CMS Web Application Firewall Errors

## CMS Web Application Firewall (WAF) Issues

- CMS WAF errors are received when an attempted action (i.e. saving or exporting) is rejected by the CMS security policy, blocking further action by the user
- This can happen when working in a measure or test case that previously did not receive a CMS WAF error, or when making a change to the measure or test case

## When an action is blocked, please include the following information in your ONC JIRA ticket.

- Measure Name/ID
- Test case Name (if applicable)
- Action that resulted in unexpected error messages or an inability to save changes (include specific verbiage/CQL/JSON that was unable to save)
- Providing the error message assists the team in confirming the cause of the issue
- When error messages include a 'Support ID' include that ID number in your ticket so that can be provided to CMS to unblock the attempted action

## Examples of CMS WAF error messages:

- The Measure Authoring Tool was unable to process the request. Please try again. If the problem persists, please contact the Help Desk.
- System error. Unable to process information
- 403 Forbidden The requested URL was rejected by CMS security policy. If you believe this is in error, please contact the HIDS Security Operations Center [soc@hcqis.org](mailto:soc@hcqis.org) and reference your Support ID: 2586968644408754759



# Versioning Measures in MADiE

Versioning for QDM measures has been temporarily disabled.

**QI-Core Measures:** When versioning MADiE measures, please double check you have selected the appropriate version (Major, Minor or Patch). A pop up will appear where a user can select Major, Minor, or Patch version. The pop up will also display the current version number, the future version number after versioning is complete, and a text area for the user to confirm the new version number. Users will need to type in the version number, and it will need to match what the tool will be updating the version number to in order to proceed.

The screenshot shows a 'Create Version' dialog box. At the top, it says 'Create Version' with a close button (X) and a note '\* Indicates required field'. Below this, there are four main sections: 1. 'Version Type' with a dropdown menu currently showing 'Patch'. 2. 'Current Version #' with a text input field containing '0.0.000'. 3. 'New Version #' with a text input field containing '0.0.001'. 4. 'Confirm New Version #' with a text input field containing 'Confirm New Version Number' and a blue confirmation icon.

To better understand what part of the measure version is updated when versioning a measure, see the values below. X is the value that will be incremented. P is the value that remains the same after versioning. 0 is the value that will be cleared out and set to 0 after versioning.

Major X.0.000

Minor P.X.000

Patch P.P.XXX

If you version your measure using the wrong version type (Major, Minor, or Patch), the MADiE Help Desk Team can help; however, you may lose any updates you made after the previous version.

# Help Desk Ticket Submission Process

The [MAT Bonnie MADiE TicketSubmissionGuidance](#) document provides guidance to measure developers needing assistance with measures or test cases. This document includes the following:

- Steps to take prior to submitting a Help Desk ticket
  - Review available documentation
  - Consult with SMEs
- **A list of artifacts to include if a ticket is being created with either tracker for assistance with measure CQL or test case JSON**
  - Measure Export, Full measure CQL in a .txt file, test case export (if applicable) full test case JSON in a .txt file
  - **Do not** send screen prints of partial CQL and/or JSON
- The types of tickets to submit to the [CQL Issue Tracker](#)
  - Tickets submitted to the CQL Issue Tracker will be evaluated and the standards team may identify the ticket needs to be moved on to the Bonnie MAT MADiE Issue Tracker to evaluate MADiE, MAT and Bonnie functionality
- The types of tickets to submit to the [Bonnie MAT MADiE Issue Tracker](#)

# Reminder when submitting tickets

## MAT Tickets

- Indicate the tool version and Measure Model: QDM vs. FHIR R4
- Attach the measure package if appropriate
- Provide Screenshots of error messages

## Bonnie Tickets

- Indicate tool version Prior, QDM, FHIR
- Attach the affected test cases and reference them in the ticket by name if possible
- Attach the measure package used with the test cases
- Provide which account was used to test the measure(s)

## MADiE Tickets

- All measure sharing requests, **measure or library ownership transfer requests, measure or library sharing requests**, or other inquiries with a HARP ID must be submitted via email at [semanticbits-madie-help@icf.com](mailto:semanticbits-madie-help@icf.com)
- Do not submit these requests until you have confirmed that all users involved in the request have active MADiE accounts
- Indicate the tool version and Measure Model: QDM vs. QI Core
- Attach the measure package and affected CQL and test case export and JSON, if appropriate, as text files and reference them in the ticket by name

Reference the [Bonnie, MAT, MADiE Help Desk Process Diagram](#)

# QI-Core CQL Libraries

## Global Shared Libraries in MADiE:

Commonly used QI-Core libraries have been entered into MADiE.

FHIR Name in MAT	Version in MAT	QI-Core Name in MADiE	Version in MADiE
MATGlobalCommonFunctionsFHIR4	V 7.0.000	CQMCommon	V 2.2.000
FHIRCommon	V 1.1.000	FHIRCommon	V 4.3.000
FHIRHelpers	V 4.1.000	FHIRHelpers	V 4.4.000
QICoreCommon	V 1.0.000	QICoreCommon	V 2.1.000
CumulativeMedicationDurationFHIR4	V 2.0.000	CumulativeMedicationDuration	V 4.1.000
SupplementalDataElementsFHIR4	V 3.1.000	SupplementalDataElements	V 3.5.000

# QDM CQL Libraries

## Global Shared Libraries in MADiE:

Commonly used QDM libraries have been entered into MADiE.

QDM Name in MAT	Version in MAT	QDM Name in MADiE	Version in MADiE
MATGlobalCommonFunctionsQDM	V 8.0.000	MATGlobalCommonFunctionsQDM	V 8.0.000
CumulativeMedicationDurationQDM	V 3.0.000	CumulativeMedicationDurationQDM	V 3.0.000

# CQL Libraries

## CQL Libraries owned by MAT users:

- Standalone CQL libraries for both FHIR and QDM will not transfer like measures.
- Library owners will need to create the shell library in MADiE with the correct model and then copy and paste the contents of the library from MAT into the library in MADiE.
- To ensure your library version number matches what was in MAT and used by your measure, users will need to major/minor version their library until the desired version number is reached.
- Reminder, versioned libraries cannot be deleted so version carefully.

## **Important!**

If you are not the original owner of the standalone CQL library, we request you do not add the library in MADiE. Please give the owner time to create and version the library.

# Human Centered Design - HCD

- CQL Workspace
  - Includes
  - Parameter
  - Definition
  - Function
- Auto Increment
- Linking
- Stratifications

# HCD

## CQL Workspace

- Includes

The screenshot displays the 'CQL Workspace' interface within the 'Measure Authoring Tool v6.11 (FHIR)'. The top navigation bar includes 'Measure Library', 'Measure Composer', 'CQL Library', and 'CQL Composer'. The main content area is titled 'Test Measure Draft v0.0.000 (QDM / CQL)' and features a sidebar with navigation options: 'Includes' (00), 'Value Sets' (04), 'Codes' (00), 'Parameter' (02), 'Definition' (04), 'Function' (01), and 'CQL Library Editor'. The 'Includes' section is active, showing a search input field and an 'Available Libraries' section with the text 'Search to find available libraries.' Below this is a 'CQL Library Viewer' table with a single row containing the number '1'.



## Bone density evaluation for patients with prostate cancer and receiving androgen deprivation therapy

Version: 0.0.007

Model: QI-Core v4.1.1

MP: 1/1/2023 - 12/31/2023

In-Use

Details

CQL Editor

Population Criteria

Test Cases (5)

Review Info

Includes

Value Sets

Codes

Parameters

Definitions

Functions

```

1 library HospitalHermSevereHypoglycemiaMATGlobalCommonFunctions version '1.0.000'
2
3 using GDM version '5.5'
4
5 valueset 'Emergency Department Visit': 'urnoid:2.16.840.1.113883.3.117.1.1.292'
6 valueset 'Encounter Inpatient': 'urnoid:2.16.840.1.113883.3.666.5.307'
7 valueset 'Intensive Care Unit': 'urnoid:2.16.840.1.113762.1.4.1029.200'
8 valueset 'Observation Services': 'urnoid:2.16.840.1.113762.1.4.1111.143'
9 valueset 'Outpatient Surgery Service': 'urnoid:2.16.840.1.113762.1.4.1110.38'
10
11 parameter 'Measurement Period' Interval
12
13 context Patient
14
15 define 'ED Encounter':
16   ["Encounter.Performed": "Emergency Department Visit"]
17
18 define 'Inpatient Encounter':
19   ["Encounter.Performed": "Encounter Inpatient"] EncounterInpatient
20   where "LengthInDays"(EncounterInpatient.relevantPeriod) <= 120
21   and EncounterInpatient.relevantPeriod ends during day of "Measurement Period"
22
23 /*CalendarAgeInDaysAt calculates the calendar age (meaning the age without considering time components) in
24 days*/
25 define function 'CalendarAgeInDaysAt'(BirthDateTime DateTime, AsOf DateTime):
26   days between ToDate(BirthDateTime)and ToDate(AsOf)
27
28 /*CalendarAgeInDays calculates the calendar age (meaning the age without considering time components) in
29 days as of today*/
30 define function 'CalendarAgeInDays'(BirthDateTime DateTime):
31   CalendarAgeInDaysAt(BirthDateTime, Today())
32
33 /*CalendarAgeInMonthsAt calculates the calendar age (meaning the age without considering time components)

```

Library

Saved Library (0)

Library Alias

Library Search

Clear

Search

Library Results

Discard Changes

Save

# HCD

## CQL Workspace

- Parameter

The screenshot displays the 'Measure Authoring Tool v6.11 (FHIR)' interface. At the top, there are navigation tabs for 'Measure Library', 'Measure Composer', 'CQL Library', and 'CQL Composer'. The current view is 'Test Measure Draft v0.0.000 (QDM / CQL)'. Below this, there are sub-tabs for 'Measure Details', 'CQL Workspace', 'Population Workspace', 'Measure Packager', 'Clause Workspace', and 'QDM Elements'. The 'CQL Workspace' tab is active, showing a 'General Information' section with a list of items: 'Includes' (00), 'Value Sets' (04), 'Codes' (00), 'Parameter' (02), 'Definition' (04), 'Function' (01), and 'CQL Library Editor'. A search box is present with the text 'Example example Measurement Period'. The main area is titled 'CQL Workspace > Parameter' and contains a 'Parameter Name' field, a 'Comment' field, and an 'Add New' button. Below this is an 'Information' section with a 'CQL Expression Editor' and a 'CQL Library Viewer (Read Only)'. At the bottom, there are 'Save', 'Erase', and 'Delete' buttons. The footer includes the CMS.gov logo, the text 'A federal government website managed by the Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Baltimore, MD 21244', and the Department of Health and Human Services logo.

- Flows
- CQL Includes
- CQL Parameter
- CQL Definitions
- CQL Functions
- No description

Home > Measure

## Bone density evaluation for patients with prostate cancer and receiving androgen deprivation therapy

Version: 0.0.007 | Model: QI-Core v4.1.1 | MP: 1/1/2023 - 12/31/2023 | In-Use

- Details
- CQL Editor**
- Population Criteria
- Test Cases (5)
- Review Info

- Includes
- Value Sets
- Codes
- Parameters**
- Definitions
- Functions

```

1 library MyTestMeasureCQLlibrary version '0.0.000'
2
3 using FHIR version 4.0.1
4
5 include FHIRHelpers version '4.0.001' called FHIRHelpers
6 include SupplementalDataElementsFHIR4 version '2.0.000' called SDE
7 include MATGlobalCommonFunctionsFHIR4 version '5.0.000' called Global
8
9 parameter "Measurement Period" Interval
10
11 context Patient
12
13 define "SDE Ethnicity"
14   SDE."SDE Ethnicity"
15
16 define "SDE Payer"
17   SDE."SDE Payer"
18
19 define "SDE Race"
20   SDE."SDE Race"
21
22 define "SDE Sex"
23   SDE."SDE Sex"
  
```

Parameter Saved Parameters (1)

Parameter Name

Comment

Expression Editor

Clear Apply

Discard Changes Save

# HCD

## CQL Workspace

- Definition

The screenshot displays the 'Measure Authoring Tool v6.11 (FHIR)' interface. At the top, there are navigation tabs for 'Measure Library', 'Measure Composer', 'CQL Library', and 'CQL Composer'. The current view is 'Test Measure Draft v0.0.000 (QDM / CQL)' with sub-tabs for 'Measure Details', 'CQL Workspace', 'Population Workspace', 'Measure Packager', 'Clause Workspace', and 'QDM Elements'. The 'CQL Workspace' tab is active, showing a left-hand navigation menu with options: 'Includes' (00), 'Value Sets' (04), 'Codes' (00), 'Parameter' (02), 'Definition' (04), 'Function' (01), and 'CQL Library Editor'. The 'Definition' option is selected. Below the menu is a search box containing 'SDE Ethnicity', 'SDE Payer', 'SDE Race', and 'SDE Sex'. The main content area is titled 'CQL Workspace > Definition' and contains a form with fields for 'Definition Name', 'Comment', and 'Return Type'. There is an '+ Add New' button next to the 'Definition Name' field. Below the form is an 'Information' section with '+ Insert' and 'Expression Builder' buttons. The 'CQL Expression Editor' is a large text area with a line number '1' on the left. At the bottom of the editor are 'Save', 'Erase', and 'Delete' buttons. Below the editor is a 'CQL Library Viewer (Read Only)' section. At the very bottom of the page, there are navigation links: '<< Go to Measure Details' and 'Go to Population Workspace >>'. The footer includes the 'CMS.gov' logo, the text 'A federal government website managed by the Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Baltimore, MD 21244', and a circular logo with a stylized eagle.

## Bone density evaluation for patients with prostate cancer and receiving androgen deprivation therapy

Version: 0.0.007

Model: QI-Core v4.1.1

MP: 1/1/2023 - 12/31/2023

In-Use

Details

CQL Editor

Population Criteria

Test Cases (5)

Review Info

Includes

Value Sets

Codes

Parameters

Definitions

Functions

```
1 library ExampleHere version '0.0.000'  
2  
3 using GDM version '5.5'  
4  
5 include AdultOutpatientEncounters version '3.0.000' called '_ExampleNameHere'  
6 include HospitalHarmSevereHypoglycemiaHATGlobalCommonFunctions version '1.0.000' called  
7   '_AnotherExampleNameHere'  
8 include AdultOutpatientEncounters version '2.3.000' called 'new'  
9 include AdultOutpatientEncounters version '2.2.000' called 'example'  
10  
11 valueset 'Ethnicity': 'urn:oid:2.16.840.1.114222.4.11.837'  
12 valueset 'DNC Administrative Sex': 'urn:oid:2.16.840.1.113762.1.4.1'  
13 valueset 'Payer Type': 'urn:oid:2.16.840.1.114222.4.11.3591'  
14 valueset 'Race': 'urn:oid:2.16.840.1.114222.4.11.836'  
15  
16 parameter 'Measurement Period' IntervalDateTime  
17 /*Here is a comment for the example parameter*/  
18 parameter 'ExampleParameter' IntervalDateTime  
19 /*Look at this example*/  
20 parameter 'Another Example Here' ['Adverse Event']  
21 /*no*/  
22 parameter 'help' IntervalDateTime  
23  
24 context Patient  
25  
26 define 'SDE Payer':  
27   ["Patient Characteristic Payer": 'Payer Type']  
28  
29 define 'SDE Race':  
30   ["Patient Characteristic Race": 'Race']  
31  
32 define 'SDE Sex':  
33   ["Patient Characteristic Sex": 'DNC Administrative Sex']
```

Definition Saved Definitions (0)

Definition Name

Comment

Enter

Expression Editor

Clear

Apply

Discard Changes

Save

# HCD

## Auto Increment

The screenshot displays the MADiE (Measure Authoring Development Integrated Environment) web application. The top navigation bar includes the MADiE logo, the text 'Measure Authoring Development Integrated Environment', and menu items for 'Measures', 'Libraries', 'Manifests', and 'Help'. On the right, there is a 'Connect to UMLS' button and a user profile for 'Jonathan'. Below the navigation bar, the breadcrumb 'Home > Measure' is visible. The main header area contains the measure title 'Bone density evaluation for patients with prostate cancer and receiving androgen deprivation therapy', its version '0.0.007', model 'QI-Core v4.1.1', and measure period 'MP: 1/1/2023 - 12/31/2023'. A yellow 'In-Use' badge is also present. A secondary navigation bar offers tabs for 'Details', 'CQL Editor', 'Population Criteria', 'Test Cases (5)', and 'Review Info'. The 'Test Cases (5)' tab is active. On the left, a sidebar menu lists 'Population Criteria' (with sub-items 'Criteria 1', 'Criteria 2', 'Criteria 3') and 'Configuration' (with sub-items 'Expansion', 'SDE', and 'Test Case Data'). The 'Test Case Data' section is expanded, showing a configuration for '\*Shift Test Case Dates'. It features a dropdown menu labeled '# of Years' and a descriptive text: 'Shift dates on this test case by the number of years being changed. Feb 29 in Leap Years = Feb 28 in non Leap Years'. At the bottom right of this section are 'Discard Changes' and 'Save' buttons. The footer contains links for 'Get Help', 'User Guide', 'Freedom of Information Act', 'Accessibility Policy', 'Privacy Policy', 'Rules of Behavior', 'Terms of Use', and 'cms.gov'. The MADiE logo and 'Version 1.0.1' are on the left, and the U.S. Department of Health and Human Services logo with address information is on the right.

# HCD

## Associating CMS IDs



## Measures

Welcome, Jonathan

[+ New Measure](#)

My Measures (12)

All Measures

Search



<input type="checkbox"/>	Measure	Version	Model	Actions
<input type="checkbox"/>	A Change in Severity of the Level of Food Insecurity QDM 10/30 Test Cases Passing	1.3.214	QDM v5.6	<a href="#">Edit</a> >
<input type="checkbox"/>	A Change in Severity of the Level of Food Insecurity 20/20 Test Cases Passing	0.1.010	<span>Draft</span> QI-Core 4.1.1.1	<a href="#">Edit</a> >
<input type="checkbox"/>	Skilled Nursing Facility 30-Day All-Cause Readmission Measures (SNFRM) 120/300 Test Cases Passing	2.0.017	QI-Core 4.1.1.1	<a href="#">Edit</a> >
<input type="checkbox"/>	Documentation of Clinical Response to Allergen Immunotherapy within One Year 4/5 Test Cases Passing <span>In-Use</span>	1.5.001	<span>Draft</span> QI-Core 4.1.1.1	<a href="#">Edit</a> >
<input type="checkbox"/>	Ambulatory Sensitive Conditions Admissions: Heart Failure (HF) 67/76 Test Cases Passing	1.0.005	QI-Core 4.1.1.1	<a href="#">Edit</a> >

Items per page  1 - 10 of 12[1](#) [2](#) [Next](#)



# HCD

## Stratifications

The screenshot displays the 'Measure Authoring Tool v6.11 (FHIR)' interface. At the top, there are navigation tabs for 'Measure Library', 'Measure Composer', 'CQL Library', and 'CQL Composer'. The current view is for a 'Test Measure Draft v0.0.000 (QDM / CQL)'. A sidebar on the left lists various sections: 'General Measure Information', 'Measure Steward / Developer', 'Description', 'Copyright', 'Disclaimer', 'Measure Type', 'Stratification' (highlighted), 'Risk Adjustment', 'Rate Aggregation', 'Rationale', 'Clinical Recommendation', 'Improvement Notation', 'References', 'Definition', 'Guidance', 'Transmission Format', '+ Populations', 'Supplemental Data Elements', and 'Measure Set'. The main content area is titled 'Stratification' and contains a large empty text box. A 'Delete Measure' button is located at the top left, and a 'View Human Readable' button is at the top right. A 'Save' button is positioned at the bottom right of the text box. At the bottom right of the interface, there is a link that says 'Go to CQL Workspace >>'. The top right corner shows user login options: 'Sign in to UMLS' and 'Sign in to Bonnie'.

# Bone density evaluation for patients with prostate cancer and receiving androgen deprivation therapy

Version: 0.0.007 | Model: QI-Core v4.1.1 | MP: 1/1/2023 - 12/31/2023 | In-Use

- Details
- CQL Editor
- Population Criteria
- Test Cases (5)
- Review Info

## General Information >

- Name, Version & ID
- Model & Measurement Period
- Contributors

## Measurement Overview >

- Description
- Rationale
- Clinical Recommendation
- References
- Definition
- Guidance (Usage)
- Use Context & Tags

## Stratification

Measure Set

Transmission Format

## Legal >

- Copyright
- Disclaimer

## Stratification

Comment

### Stratification Description

Patients determined as having prostate cancer who are currently starting or undergoing androgen deprivation therapy (ADT), for an anticipated period of 12 months or greater and who receive an initial bone density evaluation. The bone density evaluation must be prior to the start of ADT or within 3 months of the start of ADT.

Discard Changes

Save

# Community Questions & Discussion

# User Group Discussion



- Topic suggestions and questions for the User Group can also be submitted through the Bonnie MAT Issue Tracker located here:  
<https://oncprojecttracking.healthit.gov/support/projects/BONNIEMAT/summary>
- Additional questions or comments can be submitted by using the chat feature or unmuting your own line.

# Important Announcement

The legacy tools (MAT and all Bonnie environments) will no longer be available for use after June 28, 2024.

For security reasons, after June 28th all measure development and testing will be performed using MADiE.

As MAT and Bonnie will no longer be accessible, the measures and test cases currently contained within those tools will not be accessible to users if they are not exported prior to June 28th, 2024.

The MADiE team will continue making enhancements to MADiE and providing updates as progress is made.

# Important Announcement (continued)

## Key dates in the migration timeline:

### June 2024:

- Measure developers need to complete the process of migrating measures, libraries and test cases to MADiE if that process has not begun already.

### June 28, 2024:

- MAT, Bonnie FHIR, Bonnie QDM and Bonnie Prior shutdown. These tools will no longer be accessible by any measure developers.

If you have any questions or concerns, please contact your CMS representative. If you do not have a CMS representative, please contact the MADiE help desk at [semanticbits-madie-help@icf.com](mailto:semanticbits-madie-help@icf.com) with your questions or submit questions to the ONC Jira Bonnie MAT MADiE Issue Tracker [here](#).

# Resources

# PII / PHI

- PHI and PII are prohibited in MAT, Bonnie or MADiE.
- Measure testing should only represent synthetic patient test data.
- Report any questions or concerns to the Help Desk.





# Resources for Users

## MADiE In Depth Training Videos

- Located on the [MADiE MVP tab](#)
  - [Log In and Measures](#)
  - [QI-Core Test Cases](#)

## JIRA Status and Resolution Use Cases

- Located on the [Bonnie MAT Issue Tracker](#) Summary page

## Bonnie and MAT Troubleshooting Guides

- Located on the ONC Jira Bonnie MAT Issue Tracker Summary page
  - [Bonnie Troubleshooting Guide](#)
  - [MAT Troubleshooting Guide](#)

## Bonnie, MAT and MADiE Release Schedule

- Located on the MAT public website [Training and Resources](#) tab

## Negation Rationale in Bonnie FHIR

- Located on the MAT public website under Training and Resources/Bonnie Helpful Links
  - [Bonnie FHIR: How to use Negation Rationale](#)

# Resources for Users (continued)

MAT Public Website:

<https://www.emeasuretool.cms.gov/>

MAT 6.11:

<https://www.emeasuretool.cms.gov/MeasureAuthoringTool/Login.html>

Bonnie 4.3.2 QDM (Prior) (QDM version 5.5):

<https://bonnie-prior.healthit.gov/>

Bonnie 5.1.6 QDM (QDM version 5.6):

<https://bonnie.healthit.gov/>

Bonnie 6.2.6 FHIR:

<https://bonnie-fhir.healthit.gov/>

MADiE 1.4.2

<https://madie.cms.gov>

Bonnie MAT MADiE Issue Tracker:

<https://oncprojecttracking.healthit.gov/support/projects/BONNIEMAT/summary>

eCQI Resource Center:

<https://ecqi.healthit.gov/>