



# Bonnie, MAT and MADiE User Group



## *March User Group*

*Hosted by:*

*ICF/SemanticBits*

*March 21, 2024*

# Disclaimer

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

Attendees who have objections to the meeting being recording 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 & Discussion
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

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## MAT 6.11 QDM & FHIR

# Measure Authoring Tool: Current State

## MAT 6.11

- Maintenance Release occurred on 2/28/24
  - Users can no longer generate a CMS ID in the MAT. In order to generate a CMS ID for a measure, users will need to transfer the measure to MADiE and generate the CMS ID for the measure in MADiE.
  - Users can transfer measures from MAT to MADiE more than once. The newly transferred measure will replace the previously transferred measure. After this transfer is complete the measure will be reset to draft status and the version will display as 0.0.000 in MADiE.
- 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

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**Bonnie 4.3.1 QDM (Prior)**

**Bonnie 5.1.5 QDM**

**Bonnie 6.2.5 FHIR**

# Bonnie Prior: Current State

## Bonnie 4.3.1 Prior

- Bonnie 4.3.1 Prior maintenance release on 10/2/23
- Supports QDM 5.5
- Users will receive a warning after 10 minute of inactivity and logged out after 15 minutes



# Bonnie QDM: Current State

## Bonnie 5.1.5 QDM

- Bonnie 5.1.5 QDM release on 11/30/23
- Supports QDM 5.6
- Supports QDM/CQL and CQL 1.5
- Patient conversion functionality will remain disabled

# Bonnie FHIR: Current State

## Bonnie 6.2.5 FHIR

- Bonnie 6.2.5 FHIR maintenance release on 10/2/23

## 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:

- 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 28<sup>th</sup>, 2024.
- Future MAT or Bonnie releases will be communicated to users during User Group, community and stakeholder meetings and via email communication.

# MADiE

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**Version 1.2.7**

# MADiE: Current State



## MADiE – 1.2.7 3/13/2024 Release

- **QDM Measures:** The following updates have been made:
  - Users now have the ability to enter:
    - Definition (Terms)
    - A Measure Set description
    - Stratification Description for each stratification in the measure.
  - Users now have the ability to delete a measure reference from the measure
- **QDM Measures:** The notification email users receive when a measure transfer fails due to the measure name or CQL library name containing an underscore has been updated to inform the user why the transfer failed. ([BONNIEMAT-1752](#)).
- **QDM Measures:** Users now have the ability to clone a test case element in the test case builder.



## MADiE – 1.2.6 2/28/2024 Release

- MADiE has been updated to allow users to generate a CMS ID.
- In the Population Criteria tab, Reporting subarea, the Rate Aggregation field has been enhanced to expand automatically when more text is entered than fits in the field on the screen.
- **QDM Measures:** MADiE has been updated to allow users to transfer a measure from MAT to MADiE more than once. When users transfer a measure from MAT to MADiE that was previously transferred, the newly transferred measure will replace the previously transferred measure. After this transfer is complete the measure will be reset to draft status and the version will display as 0.0.000 in MADiE. Measure sharing will be retained in MADiE with subsequent transfers.
- **QDM Measures:** The Details tab has been updated to add References in the Measure Overview subarea. Users may elect the type of reference(s) they wish to add. ([BONNIEMAT-1060](#))
- **QDM Measures:** When editing a test case, users can now view the Measure CQL on the right side of the screen.
- **QDM Measures:** MADiE has been updated to use CQM Execution Engine 4.1.5. More information can be found [here](#). ([BONNIEMAT-1696](#))

# MADiE Known Issues (1 of 2)

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://oncprojectracking.healthit.gov/support/projects/BONNIEMAT/summary>

## **CQL-ELM Translator Known Issues as of 3/20/24:**

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: [CQLIT-371](#)

## **MADiE Known Issues as of 3/20/24:**

- 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 2)

## MADiE Known Issues as of 3/20/24:

- 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](#)
- **QDM Measures:** When a measure is retransferred from the MAT to MADiE, if the measure had test cases added or imported in MADiE prior to retransferring the measure, the test case expected values in MADiE are being deleted during the retransfer. [BONNIEMAT-1772](#)
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# 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
  - 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 Sharing Request Form v1.1 – to request measures and test cases be shared – submitted by the owner via email
  - MADiE Measure or Library Ownership Transfer Request Form is now available. This form should be submitted by the owner via email

# 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.

Create Version \* Indicates required field X

\* Version Type Patch Current Version # 0.0.000

New Version # 0.0.001 \* Confirm New Version # Confirm New Version Number

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** or inquiries with a HARP ID must be submitted via email at [semanticbits-madie-help@icf.com](mailto:semanticbits-madie-help@icf.com)
- 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](#)

# CQL Libraries

## Global Shared Libraries in MADiE:

Commonly used libraries were entered into MADiE following the release.

FHIR Name in MAT	Version in MAT	QI-Core Name in MADiE	Version in MADiE
MATGlobalCommonFunctionsFHIR4	V 7.0.000	CQMCommon	V 2.0.000
FHIRCommon	V 1.1.000	FHIRCommon	V 4.3.000
FHIRHelpers	V 4.1.000	FHIRHelpers	V 4.3.000
QICoreCommon	V 1.0.000	QICoreCommon	V 2.0.000
CumulativeMedicationDurationFHIR4	V 2.0.000	CumulativeMedicationDuration	V 4.0.000
SupplementalDataElementsFHIR4	V 3.1.000	SupplementalDataElements	V 3.4.000



# CQL Libraries (continued)

## **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.

# Community Questions & Discussion

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# 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 28<sup>th</sup>, 2024.

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

# Important Announcement

## Key dates in the migration timeline:

**March and April 2024:** MADiE continues to release key features to support QDM measure development, as well as enhancements based on prioritization discussions.

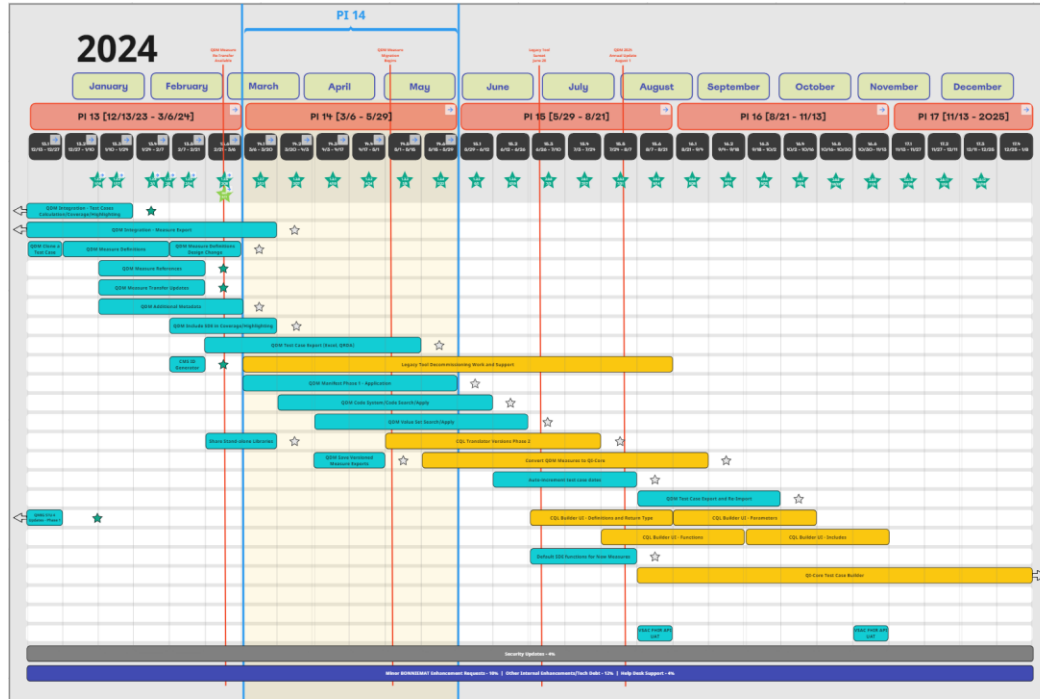
**May 2024:** Measure developers need to begin the process of migrating measures, libraries and test cases to MADiE if that process has not begun already.

**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](#).

# MADiE Roadmap Updates

- Roadmap - [https://miro.com/app/board/uXjVPhO9hJg=?share\\_link\\_id=504128610006](https://miro.com/app/board/uXjVPhO9hJg=?share_link_id=504128610006)



# 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.

# Resources

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# PHI/ PII

- 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

## 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

MAT Public Website:

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

MAT 6.11:

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

Bonnie 4.3.1 QDM (Prior) (QDM version 5.5):

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

Bonnie 5.1.5 QDM (QDM version 5.6):

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

Bonnie 6.2.5 FHIR:

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

MADiE 1.2.7:

<https://madie.cms.gov>

Bonnie MAT MADiE Issue Tracker:

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

eCQI Resource Center:

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