



# MAT & Bonnie User Group



*Hosted by:  
SemanticBits  
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# 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. Tool Modernization - MADiE Update
4. Community Questions & Discussion
5. Review of Resources

## Objectives

- Inform MAT & Bonnie 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 6.10 QDM**

**MAT 6.10 FHIR**

# Measure Authoring Tool

## Current State:

- MAT 6.10 maintenance was released September 8<sup>th</sup> and is currently available to users.
- Detailed release notes as well as the user guide are available on the MAT web site under Training and Resources
- MAT 6.10 Training Video is now available under Training and Resources
- This version of the MAT supports the authoring of both the QDM/CQL using QDM version 5.6 as well as FHIR 4.0.1 based measures.
- For QDM measures, the MAT 6.10 will continue to use version 1.5.3 of the CQL-ELM translator. For FHIR measures, the MAT 6.10 will continue to use version 1.5.2 of the CQL-ELM translator.

# Measure Authoring Tool

## Maintenance:

- Maintenance is usually zero down time.
- Any known downtime for maintenance will be communicated to all users via email.

# Measure Authoring Tool

Included in the September 8<sup>th</sup> Release:

1. FHIRHelpers references are no longer intermittently removed when not referenced by top level libraries.
2. Updated the URI for the Race and Ethnicity Code System
3. CQL Workspace, General Information data is now displayed despite presence of a severe syntax error in the CQL.
4. The first error returned from the CQL to ELM Translator is no longer intermittently suppressed in the MAT.

# Bonnie

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**Bonnie 4.3.0 QDM (Prior)**

**Bonnie 5.0 QDM**

**Bonnie 6.2.0 FHIR**

# Bonnie Prior Current State

## Bonnie 4.3.0 Prior

- Supports QDM 5.5
- Requested patient conversion defaults implemented
- Users use HARP IDs for authentication
- Group Account functionality is available
- Users will receive a warning after 10 minute of inactivity and logged out after 15 minutes
- Bonnie 4.3.0 Prior maintenance release on 9/8/21
  - Patient conversion functionality re-enabled
  - Milliseconds no longer included in conversion
  - Patient description included in conversion

# Bonnie QDM Current State

## Bonnie 5.0 QDM

- Supports QDM 5.6
- Supports QDM/CQL to CQL 1.5
- Patient conversion functionality disabled until a future Bonnie QDM release
- Users use HARP IDs for authentication
- Group Account functionality is available
- Users will receive a warning after 10 minute of inactivity and logged out after 15 minutes

# Bonnie FHIR Current State

## Bonnie 6.2.0 FHIR

- Users use HARP IDs for authentication
- Group Account functionality is available
- Users will receive a warning after 10 minute of inactivity and logged out after 15 minutes
- Additional support for QI Core Attributes

# Bonnie FHIR

Currently Supported Attributes as well as requested attributes are linked on the Bonnie and MAT issue tracker on the summary page:

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

# Bonnie FHIR

## Future Releases:

- Next release targeted for late September
  - Can expect the following updates – Detailed release notes will contain more information
    - Updated cardinality to a few attributes allowing more than one attribute to be added
    - Adding support for codableConcept values in extensions
    - Ability to reference an existing resource instead of creating a new one
- Bonnie FHIR will be releasing incrementally to add new FHIR features
  - Users will be notified when those release dates are determined.
  - Attributes adding in the release will be noted in the release notes
  - Submit requests for additional QI-Core Attribute support to the MAT and Bonnie Issue Tracker:  
<https://oncprojecttracking.healthit.gov/support/projects/BONNIEMAT/summary>

# Bonnie

## Maintenance:

No planned maintenance currently.

## Known Issues:

1. The QRDA export is not correctly reflecting relevant date time. There is no workaround, but this will be addressed in an upcoming release.
2. For Bonnie FHIR, a measure calculation error may be encountered. The tuple naming convention requires an update. The team is working with additional contributors and will address this in an upcoming release.
3. For Bonnie FHIR, measures that include stratification are not displaying properly for users to test. There is no workaround at this time, but this will be addressed in an upcoming release.
4. The Bonnie team is looking into issues with dates and their precision. We are working on a fix for precision for measurement period and patient conversion. After these fixes are in place we will evaluate if time zones are playing any role in the issues people are seeing with calculation of edge cases in Bonnie

# Tool Modernization

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**Measure Authoring Development Integrated Environment (MADiE)**

# MADiE - Tool Modernization

- MADiE is the modernization effort for MAT and Bonnie  
Measure Authoring Development Integrated Environment
- Current Activities
  - Building a CQL editor
  - Creating React user interface components that will be used to build MADiE measure pages
  - Creating the authentication layer so users can eventually log into MADiE with their HARP IDs

# MADiE Discussion Topic

## MADiE Themes and Insights

Insights: Important points from discussions with the MADiE ambassadors.

- Pain points
- Workflow issues
- Enhancements Needed

Themes: Collections of Insights repeated by multiple users

# MADiE Themes

## **Allow for Iterative What-If Testing**

- We want to be able to tweak one thing and immediately test
- It is 'excruciating' to have to take the steps to bundle and package, import and then test
- I want help cleaning up the what-if code I don't end up using
- Give me a What-If playground or sandbox data separate from the production data
- Allow me access to production data in the playground. I don't want to change other people's code but may try to improve it, learn from it or use it as a base for my own work

# MADiE Themes

## **MADiE should be a Collaborative Environment**

- Multiple people should be able to work on a measure or library at the same time

## **Allow Multiple Drafts of a Measure to be Open Simultaneously**

- Allow users to build and edit multiple versions of a measure in the same model
- Allow users to build and edit multiple model versions of a measure at the same time (starting with QDM 5.6 and FHIR 4.0.1 but add additional model versions as they are created.)

# MADiE Themes

## **Re-Envision the Population, Sub-Population, Stratification and Measure Grouping Tasks**

- Many measures only have one Initial Population, Numerator and Denominator. Create the packaging group for me in this case. You should be able to default this for me and let me change things as needed.
- These tasks and this workflow should be easier to use and more intuitive

# MADiE Themes

## **Allow Users to Review and Comment throughout the Metadata and the CQL**

- Show me the history of review and response conversations. I want to see comments from the last AU or over time to see what hasn't been fixed.
- I should be able to make inline comments right in the CQL at the pertinent place. They should be visible if I turn that feature on but should not interfere with reading the CQL.
- Multiple people should be able to contribute to a review conversation in a thread
- I want to be able to flag a specific person to look at something. Flag them at the beginning of a code segment.
- I want to mark comments as resolved

# MADiE Themes

## **Track Changes, Review, Audit Logging**

- Let me compare two versions of a measure or library and let me see the changes
- I want to be able to see changes in the way you see Track Changes in Word. Who did what, and when?

# MADiE Themes

## **Provide a Robust Editor**

- Full Screen editor, Web based, accessible from CodeDev
- Provide an option for a dark versus light theme
- Color Coding
- Intellisense
- Give me a find and replace or replace all

# MADiE Themes

## MADiE User Interface

- Don't load all my data for measures, libraries and test cases. It takes too long.
- Show me the recent data I worked on.
- Show me the recent versions of data. I can expand or ask for older versions
- Don't calculate all my test results when I look at my test dashboard. It takes too long.
- Give me a spell checker for my Human Readable fields.

# MADiE Themes

## Value Sets and Code Systems

- This UI needs help. It is painful to use.
- Why can't I search for my value sets and code systems right in MADiE?
- Why do I have to go to UMLS and search and then copy my data into the measure?

## Better Searching and Reporting

- I want to learn by looking at other measures and libs. I want to be able to report on and search for specific additional information. You should allow for more metadata searches
- I want sortable grids. And I want to be able to sort data by other fields I can't see now, like last updated

# MADiE Themes

## Provide for Parameterized Templates or Patterns

- Let me create private or shared templates. I can pull in the templates into my code and fill in the variables appropriate for my measure or library
- This will also help people ramp up on CQL, which is hard to learn

Drill Into Topic

# MADiE Themes

## Give me a Dashboard

- We had 61 measures to review and that's going to increase with FHIR
- Provide a highlight mapping with a pointer/link into the code location I need to review, like a bookmark. Show the list of links for one person to direct their specific attention to a series of specific comments, or for a code segment.
- It should help me keep tabs on the state of my work
- How many items do I need to review? Which have I reviewed?
- How much test coverage do I have?
- What are my highest priority items?

Drill Into Topic

# Community Questions & Discussion

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# 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 raising your hand and we will unmute your line.

# Community Questions

1. How is coverage percentage calculated in Bonnie?
2. Update on timing calculations in Bonnie (comparing milliseconds) and time zone offsets: tickets 915, 943, 946
3. Bonnie 989 (BonnieQDM – ‘coalesce’ performance)
4. Bonnie 990 (BonnieFHIR – replacing ‘date from’ with ‘day of’ causing test cases to fail)

# Resources

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# New Resources for Users

## **Bonnie and MAT Troubleshooting Guides**

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

## **Release Table for MAT and Bonnie**

- Located on the MAT Public Web site under Training and Resources/MAT Helpful Links
- [Bonnie and MAT Release Schedule](#)

# Resources

MAT Public Website:

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

MAT 6.10:

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

Bonnie 4.3.0 QDM (Prior) (QDM version 5.5):

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

Bonnie 5.0 QDM (QDM version 5.6):

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

Bonnie 6.2.0 FHIR:

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

Bonnie MAT Issue Tracker:

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

eCQI Resource Center:

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