

Publicly Accessible Release Schedule

You can find MAT and Bonnie Release Notes here: <https://www.emeasuretool.cms.gov/training-resources>

You can find MADiE Release Notes here: <https://www.emeasuretool.cms.gov/madie-mvp>

2024 MADiE

Date	Version	CQL to ELM Translator	Features
7/25/2024	2.0.1	3.3.2	<ul style="list-style-type: none"> • QDM Measures: MADiE now supports the ability for users to search, filter and apply codes and value sets into their CQL directly (without having to access VSAC outside of MADiE in order to look up the code or value set). • QDM Measures: The Measure Type field has been updated to adhere to the latest THO (https://terminology.hl7.org/ValueSet-v3-ObservationMeasureType.html) in both the UI in MADiE as well as the measure exports. (BONNIEMAT-1927, BONNIEMAT-1928) • QDM Measures: Measure exports are updated to display the following: <ul style="list-style-type: none"> ○ Endorsed By field: Display "None" when the user makes no selection. ○ CBE Number field: Display "Not Applicable" when the user makes no selection for the Endorsed By field. (BONNIEMAT-1931) • QDM Measures: The QRDA Summary file is now included in the QRDA Test Case Export. (BONNIEMAT-1659) • QDM Measures: The human readable export now supports displaying special characters. (BONNIEMAT-1869) • QI-Core Measures: MADiE has been updated to use FQM-Execution Engine 1.4.1. Release notes can be found here. • QDM Measures: MADiE has been updated to use CQM-Execution Engine 4.2.0. Release notes can be found here. • QDM Measures: The QRDA export for test cases does not unzip in Windows systems using the native Windows unzip program. (BONNIEMAT-1917) • QDM Measures: In some cases, the QRDA test case export would fail, with minimal feedback. (BONNIEMAT-1967) • QDM Measures: The measure export process was optimized to prevent exports from taking several minutes to complete, resulting in exports timing out and failing to complete. (BONNIEMAT-1944)
7/10/24	2.0.0	3.3.2	<ul style="list-style-type: none"> • When a CMS Web Application Firewall (WAF) error blocks an action from being performed, a popup message will now display. This message will notify the user they have encountered a CMS WAF issue and instruct the user to create a MADiE IT ticket and, if available, will display the support ID to include in the ticket. • MADiE has been updated to support updates being made to the CQL to ELM translator version for QDM or for QI-Core separately. • MADiE now displays the version of the CQL to ELM translator that is used in the measure. • Measures in Draft status – the "Currently using CQL to ELM Translator Version" field was added to display the current translator version

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			<ul style="list-style-type: none"> Measures in Versioned status – the "Versioned with CQL to ELM Translator Version" field was added to display the version of the translator that was used when versioning the measure QDM Measures: The Manifest selected for value set expansion will be used for testing. Value set versions specified in the measure CQL cannot be used and the value set version will be removed from the CQL the next time the user saves the measure from any tab. After saving, a message will display notifying the user of this update to the measure CQL. QDM Measures: The list of values in the Terminology section of the human readable export for QDM measures is now correctly sorted (BONNIEMAT-1868) BONNIEMAT-1946) QI-Core Measures: The stratification drop down has been updated to include <i>only</i> the populations selected in the population criteria. QDM Measures: Users may experience unexpected behavior with the test case "Delete All" button. <ul style="list-style-type: none"> The "Delete All" button will remain enabled after users delete all test cases. The "Delete All" button will remain disabled after importing test cases. 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." QDM Measures: Initially after users change the selected Manifest for test case execution, the test case results may display incorrect information. 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. QDM Measures: When updating Stratification definitions (the narrative) after transferring a measure from MAT to MADiE, users may receive the following error message. "QDM group stratifications cannot be associated." (BONNIEMAT-1894, BONNIEMAT-1933) Work around: Delete the Stratification groups and rebuild in MADiE.
6/20/24	1.4.2	3.3.2	<ul style="list-style-type: none"> 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. 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: <ul style="list-style-type: none"> Latest - this option uses the latest version of each value set available in VASC. 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

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			<p>Note:</p> <ol style="list-style-type: none"> VSAC Draft Manifests include value sets in a draft status VSAC Active Release Manifests do not support draft value sets <p>(BONNIEMAT-1376)</p> <ul style="list-style-type: none"> QI-Core Measures: MADiE has been updated to store the test case Group, Title and Description as part of the test case export so that it can be used on re-import to populate the group, 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 test case exports: <ul style="list-style-type: none"> Resource IDs will use MADiE-generated UUIDs (BONNIEMAT-1879) References in the MeasureReport will use relative URLs instead of full URLs (BONNIEMAT-1878) Transaction type 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.
6/5/24	1.4.1	3.3.2	<ul style="list-style-type: none"> QDM Measures: The following updates have been made to the human readable export file: <ul style="list-style-type: none"> 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) <ul style="list-style-type: none"> Denominator Exclusions Numerator Exclusions Denominator Exceptions Measure Population Exclusions 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. <ul style="list-style-type: none"> 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. <p>IMPORTANT NOTE:</p> <ul style="list-style-type: none"> If a measure is versioned in MADiE after the MADiE 1.4.1 release prior to completing that one final transfer from the

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			<p>MAT to MADiE, that measure may NOT be transferred from the MAT to MADiE one final time as noted above.</p> <ul style="list-style-type: none"> • 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)
5/29/24	1.4.0	3.3.2	<ul style="list-style-type: none"> • The version number displayed on the Create Version popup screen has been updated to take into account all prior and existing versions in the measure set when displaying the new version number (based on if the user chose major, minor, or patch.) (BONNIEMAT-1826) • The description field label on the Population Criteria screen has been updated to specifically reference the population criteria in which the user is currently working. (BONNIEMAT-1323) • QDM Measures: Users can now export QDM test cases in Excel and QRDA formats. (BONNIEMAT-1659) Note: The QRDA Summary file will be added in a future release. • QDM Measures: The following updates have been made to measure exports: <ul style="list-style-type: none"> ○ Exports will now include the translator version used at the time the measure was versioned. ○ The measure version number displayed in the HQMF and human readable files for measures in draft status will now indicate the exported measure was in draft status. ○ The human readable header now includes a value of "None" when the Population descriptions and Stratifications descriptions on the Population Criteria tab remain blank at the time of export. (BONNIEMAT-1865)
5/13/24	1.3.3 Maintenance Release	3.3.2	<ul style="list-style-type: none"> • QDM Measures: The Stratification Description for ratio measures has been updated to display "None" in the exported HQMF and Human Readable. (BONNIEMAT-1803) • QDM Measures: The contents of the measure export Human Readable are not displaying as expected: <ul style="list-style-type: none"> ○ Several fields are missing from the Header ○ Data entered for the Initial Population and Measure Scoring fields are ○ not being displayed in the Header ○ The Population Criteria section is not displaying the included logic BONNIEMAT-1870 BONNIEMAT-1871 BONNIEMAT-1872 BONNIEMAT-1873
5/8/24	1.3.3	3.3.2	<ul style="list-style-type: none"> • The Test Cases tab displays the total number of test cases in the measure in parentheses.

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			<ul style="list-style-type: none"> • QDM Measures: The button for importing test cases from Bonnie is renamed to 'Import from Bonnie'. • QI-Core Measures: The button for importing test cases that were previously exported from MADiE is renamed to 'Import from MADiE'. • QI-Core Measures: When there are two definitions with the same definition name in the library or included libraries, the coverage results are not as expected. For example, if there is a definition with the name "Initial Population" present in the main library and in the included library, the coverage result is not as expected. BONNIEMAT-1812 • QDM Measures: For some test cases, measure logic is not highlighted on the test case list coverage page while the Test Cases Coverage Indicator percentage correctly reflects the logic has been evaluated by the test cases. BONNIEMAT-1817
4/24/24	1.3.2	3.3.2	<ul style="list-style-type: none"> • On the My Measures and All Measures tabs in MADiE, the "View" action has been replaced by an "Edit" action for measures for which a user has edit access (the measure is either owned by or shared with the user). (BONNIEMAT-1783) • QDM Measures: Measure Set Description now displays in MADiE when a measure transferred from the MAT to MADiE contained a Measure Set Description in the MAT. (BONNIEMAT-1783)
4/11/24	1.3.1	3.3.2	<ul style="list-style-type: none"> • QDM Measures: MADiE was updated to add an optional text field for users to enter information about the improvement notation for all available options (previously this was only available if 'Other' was selected.) • QDM Measures: Number Type attributes are now available for all applicable Elements. • QDM Measures: Test case highlighting has been updated to match QI-Core highlighting. • Test cases for measures that include negation in the CQL logic are not able to be executed, the 'Run Test Cases' button is not enabling. BONNIEMAT-1782
4/3/24	1.3.0	3.3.2	<ul style="list-style-type: none"> • MADiE now allows users to share edit access to stand-alone CQL Libraries. To share edit access of a library with another user, fill out the MADiE Measure or Library Sharing Request Form and email it to the help desk at semanticbits-madie-help@icf.com. • QDM Measures: MADiE has been updated to allow users to export QDM measures from MADiE. Please note that 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: Users can now choose to include Supplemental Data Elements (SDE) in their test case calculations and highlighting. • MADiE has been updated to use LiquidBase Templates 0.4.1 based on QMIG profiles. More information can be found here.
3/13/24	1.2.7	3.3.2	<ul style="list-style-type: none"> • QDM Measures: The following updates have been made: <ul style="list-style-type: none"> ○ Users now have the ability to enter: <ul style="list-style-type: none"> ▪ Definition (Terms) ▪ A Measure Set description

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			<ul style="list-style-type: none"> <ul style="list-style-type: none"> 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.
2/28/24	1.2.6	3.3.2	<ul style="list-style-type: none"> 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)
2/15/24	1.2.5	3.3.2	<ul style="list-style-type: none"> MADiE has been updated to alert users if the CQL statement declaring a value set is in an incorrect format. <ul style="list-style-type: none"> For QI-Core the format should begin with "http://cts.nlm.nih.gov/fhir/ValueSet/", followed by the OID for the value set For QDM the format should begin with "urn:oid:", followed by the OID for the value set <p>Note: This validation has been applied to all measures. Measures previously saved with a CQL statement that was not in the correct format will now display a validation error.</p> QDM Measures: <ul style="list-style-type: none"> In an effort to support re-transfer of measure from MAT to MADiE and iterative testing for QDM measures in MADiE, users cannot version QDM measures at this time. The Details tab has been updated to add the Transmission Format field. In the Population Criteria tab, Base Configuration sub-tab, the label on the "Type required" field has been changed to "Measure type". Test case drop down options have been updated to display in alphabetical order for the fields listed below. (BONNIEMAT-1709) <ul style="list-style-type: none"> Codes tab: Code System Attributes tab:

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			<ul style="list-style-type: none"> Attribute Type Value Set/Direct Reference Code <ul style="list-style-type: none"> QI-Core Measures: MADiE has been updated to use LiquidBase Templates 0.4.0 based on QMIG profiles. More information can be found here. QI-Core Measures: There is an issue in how QI-Core profiles are being mapped to their FHIR resources, resulting in the measure export to fail. (BONNIEMAT-1718)
2/6/24	1.2.4 Maintenance Release	3.3.2	<ul style="list-style-type: none"> QI-Core Measures: On the Details tab, the Endorsing Organization dropdown was updated from “NQF” to “CMS Consensus Based Entity”. QI-Core Measures: Measures containing a value for Endorsing Organization and with no Endorsement number were unable to be saved in MADiE. These measures will no longer display an Endorsing Organization if there is no Endorsement number. (BONNIEMAT-1727)
2/1/24	1.2.4	3.3.2	<ul style="list-style-type: none"> The “Create Version” popup screen has been updated to provide additional information to assist users in verifying the version number of the measure after the measure is versioned. The popup screen will now also display: <ul style="list-style-type: none"> The current version number of the measure The new version number of the measure based on the type of version the user selects from the dropdown on the “Create Version” popup screen (MAJOR, MINOR, or PATCH) will display. Users will be required to type the new version number into a "Confirm New Version #" field to verify the new version number for the measure. MADiE has been updated to send an email to the user attempting to transfer a measure from MAT to MADiE. The email notifies the user if the measure transferred successfully or if the measure failed to transfer. An error message will display if the measure transfer fails. QDM Measures: The following updates have been made: <ul style="list-style-type: none"> On the Details tab, the Endorsing Organization dropdown was updated from “NQF” to “CMS Consensus Based Entity.” (BONNIEMAT-1707) On the Population Criteria tab, Reporting subtab, an additional option has been added to the Improvement Notation dropdown called "Other" which allows a user to enter a description of the Improvement Notation. (BONNIEMAT-1708) QDM Measures: When users add a diagnosis attribute on an encounter, the “Present on Admission” and “Rank” fields are now optional (BONNIEMAT-1710) QDM Measures: The following updates have been made: <ul style="list-style-type: none"> Users now have the ability to execute test cases for measures with measure observations and stratifications. The Test Cases tab now displays results for the Test Cases Coverage Indicator, including Coverage highlighting. Logic calculation highlighting now displays on the edit test case screen Highlighting tab. This includes:

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			<ul style="list-style-type: none"> Green and/or red highlighting to indicate pass/fail Logic calculation expanded results (BONNIEMAT-1553)
1/17/24	1.2.3	3.3.2	<ul style="list-style-type: none"> QI-Core Measures: MADiE has updated the ELM JSON export to retain the translator Version annotation. (BONNIEMAT-1642)
1/11/24	1.2.2	3.3.2	<ul style="list-style-type: none"> QI-Core Measures: The test case highlighting has been updated to display the CQL definition results in a more readable format to reduce horizontal scrolling. (BONNIEMAT-1674) QI-Core Measures: The Human Readable export file has been updated to include the Improvement Notation. <ul style="list-style-type: none"> QDM Measures: The following updates have been made: MADiE has been updated to fully support the use of Negation Data Element types (BONNIEMAT-1692) Added the ability to enter a date and time of death (BONNIEMAT-1693) Added the ability to clone a test case (BONNIEMAT-1704) MADiE has been updated to use FQM-Execution Engine 1.3.3. Release notes can be found here.

2024 MAT

Date	Version	CQL to ELM Translator	Features
4/15/24	6.11 Maintenance Release	QDM 1.5.12 FHIR 1.5.4	<ul style="list-style-type: none"> A banner is added to the login screen notifying MAT users that the tool is being decommissioned June 28th.
2/28/24	6.11 Maintenance Release	QDM 1.5.12 FHIR 1.5.4	<ul style="list-style-type: none"> 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. QDM Measures: MAT 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.

2024 Bonnie Bonnie Prior

Date	Version	CQL to ELM Translator	Features
4/15/24	4.3.2		<ul style="list-style-type: none"> A banner is added to the login screen notifying Bonnie Prior users that the tool is being decommissioned June 28th.

Bonnie QDM

Date	Version	CQL to ELM Translator	Features
4/15/24	5.1.6		<ul style="list-style-type: none"> A banner is added to the login screen notifying Bonnie QDM users that the tool is being decommissioned June 28th.

Bonnie FHIR

Date	Version	CQL to ELM Translator	Features
4/15/24	6.2.6		<ul style="list-style-type: none"> A banner is added to the login screen notifying Bonnie FHIR users that the tool is being decommissioned June 28th.

2023 MADiE

Date	Version	CQL to ELM Translator	Features
12/14/23	1.2.1	3.3.2	<ul style="list-style-type: none"> Removed the “Review Info” tab QI-Core Measures: The following updates have been made: <ul style="list-style-type: none"> Supplemental Data Elements (SDE) have been updated to have one description per measure instead of one description per SDE. Risk Adjustment Variable (RAV) have been updated to have one description per measure instead of one description per RAV. Measures that included more than one description per SDE and/or RAV have been updated to combine the descriptions into a single SDE and/or RAV description. QI-Core Measures: Rate Aggregation has been added to the measure bundle and human readable export. (BONNIEMAT-1630) QDM Measures: MADiE has been updated to add the following functionality: <ul style="list-style-type: none"> Users can edit elements in the element grid on the test case edit screen Users can delete all test cases associated with a QDM measure Users can transfer test cases from Bonnie QDM to MADiE QDM Measures: MADiE has been updated to display the measure CQL statements on the coverage tab after clicking ‘Run Test(s).’ Note: Code coverage percentages and highlighting will not calculate/display at this time.
11/15/23	1.2.0	3.3.2	<ul style="list-style-type: none"> QI-Core Measures: Direct Reference Code (DRC) mapping has been updated to reflect the following: <ul style="list-style-type: none"> Map all DRCs in the measure to direct reference code extension entries in its Library resource Map all DRCs in included Libraries to direct reference code extension entries in their respective Library resources QDM Measures: MADiE has been updated to allow users to create and execute QDM test cases.

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			<p>Note: Test cases may be created for a measure containing population criteria which includes stratification or observation; however, those test cases can't be executed at this time.</p> <ul style="list-style-type: none"> • QI-Core Measures: MADiE has been updated to display more test case result details. This additional information will allow users to better understand the test case results and identify the updates that would be needed to receive the expected results for the test case. • MADiE has been updated to use CQL-ELM Translator 3.3.2. More information can be found here. • QI-Core Measures: MADiE has been updated to use LiquidBase Templates 0.3.0 based on QMIG profiles. More information can be found here. • QI-Core Measures: MADiE has been updated to use FQM Execution Engine 1.3.2. More information can be found here.
10/25/23	1.115	3.2.0	<ul style="list-style-type: none"> • QI-Core Measures: Removed duplicate parameters, expressions, and data requirements from human readable file. (BONNIEMAT-1587) • QI-Core Measures: MADiE has been updated to allow users to select the bundle type used for test case(s) export. (BONNIEMAT-1607) • MADiE has been updated to use CQL-ELM Translator 3.2.0. More information can be found here. (BONNIEMAT-1619) • QI-Core Measures: MADiE has been updated to use the latest LiquidBase Templates based on QMIG profiles. More information can be found here. (BONNIEMAT-1621, BONNIEMAT-1622)
10/11/23	1.1.14	2.11.0	<ul style="list-style-type: none"> • Replaced the authentication method used when querying VSAC. The TGT/ST workflow will be replaced with Basic Authentication header containing the user's VSAC API Key. • Enhanced CQL Editor error messaging so that warnings can be distinguished from errors and warnings do not block test case execution. (BONNIEMAT-1353) • Updates have been applied to Measure exports so that they are formatted correctly. The updates include the following: <ul style="list-style-type: none"> ○ The fullURL for all library type resources to have a root of "https://madie.cms.gov" instead of "http://ecqi.healthit.gov" ○ Set the measure type resource URL element to the same value as the fullURL value (Measure.url = Measure.fullURL) ○ Changed the PUT requests on all resources to POST requests (change "method": "POST" to "method": "PUT") ○ In the Library resources (primary and all included libraries) updated the relatedArtifact array: <ul style="list-style-type: none"> ▪ Replace "url" with "resource" ▪ Include the version of the resource when applicable at the end of the resource value (pipe-delimited) for measure model and libraries, NOT for value sets or code systems • QI Core Measures: Warning message has been updated so that when a test case that does not have a unique test case name (the family and given name combination across the measure) is imported, the message will indicate exactly what the application considers non-unique. (BONNIEMAT-1602)

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			<ul style="list-style-type: none"> QI Core Measures: MADiE has been updated to add a 'request' field when the test case is Transaction bundle type. When a user sets the test case bundle type as "Transaction", the export will now include the following: <pre>"request": { "method": "POST", "url": "MeasureReport/<measure report ID>" }</pre> (BONNIEMAT-1607) QI Core Measures: MADiE has been updated so that the reference field(s), for patient references, will automatically be set to the format of "Patient/<PatientID>", when a user saves a test case. For example, reference fields that were in the format "Patient/<anything>" will be saved in the format of "Patient/<PatientID>" (BONNIEMAT-1608)
9/27/23	1.1.13	2.11.0	<ul style="list-style-type: none"> MADiE has been updated to allow users to delete draft libraries when the user is the library owner. QI Core Measures: The following measure export updates have been made to resolve formatting issue: <ul style="list-style-type: none"> The measure resource id field is now set to the primary library name BONNIEMAT-1576 All library resource id fields are now set to that library's name All measure and library resources now have a fullURL field as well as a request block Direct reference codes (DRCs) are no longer included in the relatedArtifact array BONNIEMAT-1586 QI Core Measures: The values in the Human Readable Parameters field have been updated to display in an order consistent with other locations. BONNIEMAT-1574 QI Core Measures: MADiE has updated the 'Run Test Cases' button to 'Run Test(s)'. After clicking 'Run Test(s)' a spinner will display to indicate when MADiE is loading value sets. QI Core Measures: MADiE has been updated to use FQM Execution Engine 1.3.1. More information can be found here. <ul style="list-style-type: none"> BONNIEMAT-1479 BONNIEMAT-1567 BONNIEMAT-1597 BONNIEMAT-1613 QI Core Measures: The formatting of the fullURL for the measure report in test case exports has been updated.
9/6/23	1.1.12	2.11.0	<ul style="list-style-type: none"> QI-Core Measures: MADiE has been updated to provide the ability to delete all the test cases associated with the measure on the test case list screen by pressing the Delete All button. The user will be asked to confirm this action before removing all the test cases from the measure. QI-Core Measures: MADiE has been updated to enforce a unique test case group and title combination across the measure when importing test cases. Test cases without a unique group and title combination will not be imported.

Date	Version	CQL to ELM Translator	Features
			<ul style="list-style-type: none"> • QI-Core Measures: MADiE has been updated to remove leading and trailing spaces and spaces within test case title and group values when the test case filename is created during test case export. • QI-Core Measures: Several improvements have been made to the MADiE User Interface on the edit test case screen <ul style="list-style-type: none"> ○ The Highlighting tab and the CQL code now have the same height and allow independent scrolling which lets the user compare any part of the CQL to any part of the Highlighting content in a side-by-side manner. ○ The Validation Errors panel has been expanded to have the same height as the other panels for a more consistent user experience. ○ Breadcrumbs have been added to the top of the edit test case screen to improve navigation. The breadcrumbs will have a link back to the test case list page and it will also display the group and title of the test case in which you are currently working. • The "Program Use Context" field has been removed from the Details tab for both measures and libraries. • MADiE has been updated to reduce the character limit to 64 characters instead of 255 characters. The Library Name field on the Create/Edit Measure screens and Create/Edit Library screens have been updated. • QI-Core Measures: MADiE has been updated to use the latest LiquidBase Templates based on QMIG profiles. More information can be found here.
8/25/23	1.1.11	2.11.0	<ul style="list-style-type: none"> • MADiE has been updated to enforce a unique test case group and title combination for all test cases within a measure. • QI-Core Measures: A new vertical slider has been added on the edit test case screen which allows users to resize their work area on that screen. • QI-Core Measures: MADiE has been updated to support more robust importing of test cases after they have been exported from MADiE. <ul style="list-style-type: none"> ○ Test cases imported with a PatientID that does not match an existing test case in the measure will be added as a new test case for that measure, including the expected values from the measure report. ○ Test cases with a population criteria that does not align with the population criteria in the measure will be imported, but expected values will not be imported for these test cases. • Previously, if a user searches for a draft measure and then attempts to version the measure, the "Version" action would not display in the drop down. This issue has been fixed and now a user is able to version a draft measure for which they have searched.
8/17/23	1.1.10	2.11.0	<ul style="list-style-type: none"> • QI-Core Measures: MADiE has updated existing test cases for QI-Core measures to include an absolute URL for all resource fullUrl values. An example of the difference between the relative URL and the absolute URL for a patient encounter is shown below, with the difference between the two highlighted. <ul style="list-style-type: none"> ○ relative URL: "fullUrl": "Encounter/8bc8af29-4a36-4834-bdf3-03d2c89ba196" ○ absolute URL: "fullUrl": https://madie.cms.gov/Encounter/8bc8af29-4a36-4834-bdf3-03d2c89ba196

Date	Version	CQL to ELM Translator	Features
			After this release, MADiE will automatically update any fullUrl in QI-Core measure test cases to the absolute URL when the test case is saved.
8/11/23	1.1.10	2.11.0	<ul style="list-style-type: none"> QI-Core Measures: The following Test Case Export updates have been made: <ul style="list-style-type: none"> The fullUrl value has been added to the measureReport section. The evaluatedResource now contains properly constructed fullUrl (without a leading slash ("/")). QI-Core Measures: Replaced existing PatientID references in Test Case JSON in MADiE and the export JSON file with the UUID value. QI-Core Measures: MADiE has been updated to support importing test cases after they have been exported from MADiE. <ul style="list-style-type: none"> Test cases imported with a PatientID that matches an existing test case in the measure will be overwritten by the imported JSON. The expected and actual values on the test case will not change. Test cases imported with a PatientID that does not match an existing test case in the measure will not be imported at this time. QDM Measures: MADiE has updated QDM Measure Observation validations for Continuous Variable and Ratio measures. <ul style="list-style-type: none"> Patient-based measure will not specify input parameters For measures that are not Patient-based, the input parameter type must match the type of element being returned in the list for the associated population. <ul style="list-style-type: none"> For example: if Measure Population in CV measure returns List<"Encounter, Performed">, then the associated Measure Observation's input parameter must be "Encounter, Performed" QDM Measures: MADiE has been updated to support versioning and drafting QDM measures. QDM Measures: MADiE has updated the list of Measure Type options to be conformant with HL7 standards. QDM Measures: MADiE has been updated to use CQM Execution Engine 4.1.3. More information can be found here. QI Core Measures: MADiE has been updated to use FQM Execution Engine 1.2.2. More information can be found here. MADiE has been updated to use CQL-ELM Translator 2.11.0. More information can be found here.
7/31/23	1.1.9	2.10.0	<ul style="list-style-type: none"> QI-Core measures: MADiE has been updated to support export of QI-Core test cases in a downloadable .zip file. The .zip file will include the JSON file(s) as well as a ReadMe file that maps the PatientID (UUID) to the Test Case Title and Test Case Group. Users may either export the test case JSON for a single test case or for all test cases from the test case list page. <ul style="list-style-type: none"> Exporting a single test case: An 'Export' option has been added to the 'Actions' drop down in the test case table. Exporting all test cases: Select the 'Export Test Cases' on the test case list page. MADiE has been updated so that Denominator Exception is the last population listed in the Human Readable, reflecting the order of measure calculations. The populations are now listed in the following order: <ul style="list-style-type: none"> Initial Population Denominator

Date	Version	CQL to ELM Translator	Features
			<ul style="list-style-type: none"> ○ Denominator Exclusion ○ Numerator ○ Numerator Exclusion ○ Denominator Exception • QI-Core Measures: MADiE has been updated to allow the Improvement Notation criteria / values to be de-selected • MADiE has been updated to validate CQL 'Using' statements. <ul style="list-style-type: none"> ○ CQL that includes 'Using' statements: When the model and version in the 'Using' statement does not match the model and version selected during measure creation the "Using" statement will now automatically correct when the CQL is saved. A message will be provided to notify the user of this update. ○ CQL that do not include 'Using' statements: When the CQL does not include a 'Using' statement, the user will be provided with a message indicating the CQL is missing a 'Using' statement and asking the user the model and version to the CQL. • QI-Core Measures: MADiE has been updated to allow a measure to be versioned when one or more test cases are Invalid. A Test Case is considered Invalid if the JSON contains errors.
7/12/23	1.1.8	2.10.0	<ul style="list-style-type: none"> • MADiE has been updated to support transferring library ownership. Measure developers may submit a request to transfer library ownership (with the library owner's approval) by contacting MADiE Support at semanticbits-madiehelp@icf.com. • QI-Core Measures: MADiE has been updated so that Denominator Exception is the last population listed, reflecting the order of measure calculations. The populations are now listed in the following order: <ul style="list-style-type: none"> ○ Initial Population ○ Denominator ○ Denominator Exclusion ○ Numerator ○ Numerator Exclusion ○ Denominator Exception This update impacts the following: <ul style="list-style-type: none"> ○ Population Criteria tab, Populations sub-tab ○ Test cases tab, Expected/Actual sub-tab • QDM Measures: MADiE has been updated so that Denominator Exception is the last population listed on the Population Criteria tab/Populations sub-tab, reflecting the order of measure calculations. The populations are now listed in the following order: <ul style="list-style-type: none"> ○ Initial Population ○ Denominator ○ Denominator Exclusion ○ Numerator ○ Numerator Exclusion ○ Denominator Exception • QI Core Measures: MADiE has been updated to use FQM Execution Engine 1.2.1. More information can be found here.
6/29/23	1.1.7	2.10.0	<ul style="list-style-type: none"> • MADiE has been updated to support transferring measure ownership. Measure developers may submit a request to transfer measure ownership (with the measure owner's approval) by contacting MADiE Support at semanticbits-madie-help@icf.com. • QDM Measures: MADiE now supports transferring measures from MAT to MADiE.

Date	Version	CQL to ELM Translator	Features
			<ul style="list-style-type: none"> QDM Measures: MADiE has been updated to use CQL-ELM Translator 2.10.0. More information can be found here. BONNIEMAT-1400 <ul style="list-style-type: none"> Mapping issue in the CQL-ELM Translator with the element DiagnosisPresentOnAdmission.
6/14/23	1.1.6	2.7.0	<ul style="list-style-type: none"> All long text fields have been converted to expand dynamically to accommodate large amounts of text. QDM Measures: The Supplemental Data and Risk Adjustment tabs have been updated to include one description field. All definitions selected for the Supplemental Data or Risk Adjustment will use this description field. QDM Measures: The Population Criteria tab has been updated for consistency. MADiE has been updated to use the latest LiquidBase Templates. More information can be found here. MADiE has been updated to use FQM-Execution 1.1.0. Release notes can be found here.
6/1/23	1.1.5	2.7.0	<ul style="list-style-type: none"> MADiE has been updated to support QDM Measure and Population Criteria creation. Users can now: <ul style="list-style-type: none"> Create a QDM measure <ul style="list-style-type: none"> Create group(s) Add Stratifications to a group Create a standalone QDM Library QI-Core test case validation errors have been updated to allow users to easily differentiate between error messages, Meta.profile warning messages and all other warning messages:: <ul style="list-style-type: none"> Meta.profile warning messages appear with a blue background in order to differentiate them from other warning messages (yellow background) or error messages (red background) Error messages are now preceded with "Error:" Warning messages are now preceded with "Warning:" Meta.profile warning messages are now preceded with "Meta.Profile:"
5/17/23	1.1.4	2.7.0	<ul style="list-style-type: none"> MADiE has been updated to improve error handling on the Test Case list page and the Edit Test Case page.
5/3/23	1.1.3	2.7.0	<ul style="list-style-type: none"> The Human Readable file has been updated to include a Direct Reference Codes section. MADiE has been updated to allow valid measures to be exported by any user, including users that do not own the measure or who the measure has not been shared with. MADiE has been updated to add support for Supplemental Data Elements and Risk Adjustment Variables. Tabs throughout MADiE have been updated for consistency.
4/20/23	1.1.2	2.7.0	<ul style="list-style-type: none"> Waiting spinner has been added to the 'Create Version' modal when versioning a measure to indicate the request is being processed. Draft button removed for those measures that cannot be drafted on Measure List page.

Date	Version	CQL to ELM Translator	Features																		
			<ul style="list-style-type: none">Updated QICore version in CQL when measures are transferred from MAT from QI-Core version 4.1.0 to QI-Core version 4.1.1.Updated the Human Readable file to correctly reflect the measure’s Experimental status.Updated text that appears in exported file(s) so that "text/cql-identifier" will appear, instead of "text/cql.identifier".Disable Run Test Cases button when there are only invalid Test Cases.MADiE has updated validation error messaging on the Test Case list page, when a population criteria set is removed from a measure.MADiE has been updated to use updated LiquidBase Templates. More information can be found here.																		
4/11/23	1.1.1	2.7.0	<ul style="list-style-type: none">Validations have been added for fields that are now required to Export a Measure. The required fields are:<ul style="list-style-type: none">Measure Details tab<ul style="list-style-type: none">StewardDevelopersDescriptionPopulation Criteria tab<ul style="list-style-type: none">TypeWhen a user saves a test case with any resource that does not contain Meta.profile a warning message will display listing the ResourceId(s) that do not contain Meta.profile.MADiE has been updated to enable all users to run test cases on the test cases list page and on the edit test case page. This includes measures that are not owned or shared with the user.MADiE has been updated to use FQM Execution 1.0.8. Release notes can be found here.MADiE has been updated to use CQL Translator 2.7.0. Release notes can be found here.																		
3/28/23	1.1.0	2.6.0	<ul style="list-style-type: none">MADiE has been updated to enable QI-Core v4.1.1 measure export using the ‘Export’ action on the Measure List page.The Measure Details and CQL Library Details have been updated to add ‘Program Use Context’ that defaults to blank and allows users to select the program or project of work the measure is applicable to. The drop down contains the following options: <table><tr><th>Code</th><th>Display</th><th>Definition</th></tr><tr><td>mips</td><td>MIPS</td><td>Merit-Based Incentive Payment System (MIPS)</td></tr><tr><td>ep-ec</td><td>EP/EC</td><td>CMS Promoting Interoperability Eligible Professionals/Eligible Clinicians.</td></tr><tr><td>eh-cah</td><td>EH/CAH</td><td>CMS Promoting Interoperability Eligible Hospitals or Critical Access Hospitals.</td></tr><tr><td>qpp</td><td>QPP</td><td>Quality Payment Program.</td></tr><tr><td>aapm</td><td>AAPM</td><td>Advanced Alternative Payment Models.</td></tr></table>	Code	Display	Definition	mips	MIPS	Merit-Based Incentive Payment System (MIPS)	ep-ec	EP/EC	CMS Promoting Interoperability Eligible Professionals/Eligible Clinicians.	eh-cah	EH/CAH	CMS Promoting Interoperability Eligible Hospitals or Critical Access Hospitals.	qpp	QPP	Quality Payment Program.	aapm	AAPM	Advanced Alternative Payment Models.
Code	Display	Definition																			
mips	MIPS	Merit-Based Incentive Payment System (MIPS)																			
ep-ec	EP/EC	CMS Promoting Interoperability Eligible Professionals/Eligible Clinicians.																			
eh-cah	EH/CAH	CMS Promoting Interoperability Eligible Hospitals or Critical Access Hospitals.																			
qpp	QPP	Quality Payment Program.																			
aapm	AAPM	Advanced Alternative Payment Models.																			

Date	Version	CQL to ELM Translator	Features
			<div> cpcp CPC+ Comprehensive Primary Care Plus (CPC+) </div> <ul style="list-style-type: none"> The Details tab has been updated to add Endorser fields to the Name, Version & ID subarea: <ul style="list-style-type: none"> Endorsing Organization drop down. Endorsement Number text field. If an Endorsing Organization is selected the Endorsement Number is required. If no organization is selected the Endorsement Number must be blank MADiE was updated to add a 'Review' tab with Review Date fields to support the measure review process: <ul style="list-style-type: none"> Approval Date Last Review Date <p>These fields will be blank for draft measures; once versioned the dates will be set to the date the measure was versioned.</p> <ul style="list-style-type: none"> The Measure Header has been updated. The measure name will be truncated if needed to fit the available space followed by ellipses. A tooltip will provide the full measure name if the user mouses over the ellipses.
3/8/23	1.0.7	2.6.0	<ul style="list-style-type: none"> When a Bonnie FHIR test case JSON is successfully imported into MADiE, relevant defaults are added into the JSON prior to the test case being visible to the user, in the JSON editor. In addition to the defaults added for MADiE 1.0.6 the following defaults will be added where relevant: <ul style="list-style-type: none"> MedicationRequest.requester Condition.category MADiE has been updated to enable measure versioning and drafting Updates were made to test case status to ensure 508 compliance. MADiE has been updated to use version 1.0.6 of the FQM-Execution Engine. FQM-Execution Engine release notes can be found here. MADiE has been updated to improve error handling on the CQL editor. MADiE has been updated to support test cases for ratio measure observations with two initial populations. On the Details tab for a measure, Risk Adjustment has been removed. MADiE has been updated to use version 2.6.0 of the CQL-to-ELM Translator. CQL-to-ELM Translator release notes can be found here. The fields on the Population Criteria Tab have been reorganized to allow descriptions to be added where necessary.
2/23/23	1.0.6	2.4.0	<ul style="list-style-type: none"> Users may now upload individual Bonnie FHIR Test Cases on the Test Case edit page. When a Bonnie FHIR test case JSON is successfully imported into MADiE, relevant defaults are added into the JSON prior to the test case being visible to the user, in the JSON editor. The following defaults will be added where relevant:

Date	Version	CQL to ELM Translator	Features																																																															
			<table><tr><th>Resource</th><th>Attribute</th><th>Default Value</th></tr><tr><td>QICoreCondition</td><td>Condition.subject</td><td>Reference to current test case</td></tr><tr><td>QICoreCoverage</td><td>Coverage.beneficiary</td><td>Reference to current test case</td></tr><tr><td>QICoreCoverage</td><td>Coverage.payor</td><td>Reference to Default Organization</td></tr><tr><td>QICoreCoverage</td><td>Coverage.status</td><td>active</td></tr><tr><td>QICoreDevice</td><td>Device.patient</td><td>Reference to current test case</td></tr><tr><td>QICoreEncounter</td><td>Encounter.status</td><td>finished</td></tr><tr><td>QICoreEncounter</td><td>Encounter.subject</td><td>Reference to current test case</td></tr><tr><td>QICoreMedicationAdministration</td><td>MedicationAdministration.subject</td><td>Reference to current test case</td></tr><tr><td>QICoreMedicationRequest</td><td>MedicationRequest.intent</td><td>order</td></tr><tr><td>QICoreMedicationRequest</td><td>MedicationRequest.status</td><td>active</td></tr><tr><td>QICoreMedicationRequest</td><td>MedicationRequest.subject</td><td>Reference to current test case</td></tr><tr><td>QICoreObservation</td><td>Observation.subject</td><td>Reference to current test case</td></tr><tr><td>QICorePractitioner</td><td>Practitioner.identifier</td><td>123456</td></tr><tr><td>QICorePractitioner</td><td>Practitioner.name.family</td><td>Evil</td></tr><tr><td>QICorePractitioner</td><td>Practitioner.name.prefix</td><td>Dr</td></tr><tr><td>QICoreProcedure</td><td>Procedure.status</td><td>completed</td></tr><tr><td>QICoreProcedure</td><td>Procedure.subject</td><td>Reference to current test case</td></tr><tr><td>QICoreServiceRequest</td><td>ServiceRequest.intent</td><td>order</td></tr><tr><td>QICoreServiceRequest</td><td>ServiceRequest.status</td><td>active</td></tr><tr><td>QICoreServiceRequest</td><td>ServiceRequest.subject</td><td>Reference to current test case</td></tr></table> <ul style="list-style-type: none">• Note: Condition.coverage and MedicationRequest.requester will be added as default values with the next MADiE release.• MADiE has been updated to use version 1.0.5 of the FQM-Execution Engine. FQM-Execution Engine release notes can be found here <p>MADiE has updated to use the Execution Engines trustMetaProfile. This will allow for Profile Informed Execution. Due to this update users will now need to add in meta.profile for each resource present in the test cases. An example of a meta.profile for a resource instance compliant with the QI-Core Procedure profile can be found in the JSON Test Case Guide in Figure 3.</p>	Resource	Attribute	Default Value	QICoreCondition	Condition.subject	Reference to current test case	QICoreCoverage	Coverage.beneficiary	Reference to current test case	QICoreCoverage	Coverage.payor	Reference to Default Organization	QICoreCoverage	Coverage.status	active	QICoreDevice	Device.patient	Reference to current test case	QICoreEncounter	Encounter.status	finished	QICoreEncounter	Encounter.subject	Reference to current test case	QICoreMedicationAdministration	MedicationAdministration.subject	Reference to current test case	QICoreMedicationRequest	MedicationRequest.intent	order	QICoreMedicationRequest	MedicationRequest.status	active	QICoreMedicationRequest	MedicationRequest.subject	Reference to current test case	QICoreObservation	Observation.subject	Reference to current test case	QICorePractitioner	Practitioner.identifier	123456	QICorePractitioner	Practitioner.name.family	Evil	QICorePractitioner	Practitioner.name.prefix	Dr	QICoreProcedure	Procedure.status	completed	QICoreProcedure	Procedure.subject	Reference to current test case	QICoreServiceRequest	ServiceRequest.intent	order	QICoreServiceRequest	ServiceRequest.status	active	QICoreServiceRequest	ServiceRequest.subject	Reference to current test case
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QICoreDevice	Device.patient	Reference to current test case																																																																
QICoreEncounter	Encounter.status	finished																																																																
QICoreEncounter	Encounter.subject	Reference to current test case																																																																
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QICorePractitioner	Practitioner.name.prefix	Dr																																																																
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QICoreServiceRequest	ServiceRequest.status	active																																																																
QICoreServiceRequest	ServiceRequest.subject	Reference to current test case																																																																
2/7/23	1.0.5	2.4.0	<ul style="list-style-type: none">• Enhancements have been made to the user interface to align with the MADiE design• Users can now view the version of the measure they are editing on the header of the Measure page. Draft measures will also display the version number for which that draft is based.• Updates have been made to the MADiE to ensure 508 compliance.																																																															
1/25/23	1.0.4	2.4.0	<ul style="list-style-type: none">• Updates were made throughout MADiE to update display and navigation for 508 compliance.																																																															

Date	Version	CQL to ELM Translator	Features
			<ul style="list-style-type: none"> When transferring measures between MAT and MADiE, the version numbers will retain a consistent format: major + minor + revision_number Example: 1.1.000. Error messages have been updated for consistency throughout MADiE. The Expected Results labels have been updated when executing test cases with more than one population.
1/11/23	1.0.3	2.4.0	<ul style="list-style-type: none"> Updates were made throughout MADiE to update display and navigation for 508 compliance. The Details tab now includes a field for 'Experimental'. This field will be defaulted to 'No'. Experimental indicates whether a measure is being created for testing purposes only. MADiE has been updated to use version 2.4.0 of the CQL-to-ELM Translator When transferring measures between MAT and MADiE, the match on HARP ID will no longer be case sensitive to ensure successful transfer of measures Error messages have been updated for consistency throughout Users will now see the MADiE tool version number in the footer of the tool. For measures with Measure Observations, the parameters of any functions used will be validated against the population basis selected. This will ensure the population basis selected is valid for the measure. MADiE has been updated to use version 1.0.2 of the FQM Execution Engine. Ratio measures with two Initial Populations are now supported through test case execution. When executing test cases, MADiE has been updated to use population IDs or criteria reference IDs to associate <ul style="list-style-type: none"> populations with each other, instead of population names. For measures with multiple Population Groups, users will now be able to view code coverage for the different population groups on the Test Case list page. Previously, when executing a test case for a measure with Measure Observations for both the numerator and denominator, the numerator actual value was displayed under the denominator. This has been corrected. Users retrieving value sets from VSAC with large value set expansions will no longer receive the error, 'valueSetCache is not iterable', when executing test cases.

2023 MAT

Date	Version	CQL to ELM Translator	Features
10/11/23	6.11	QDM 1.5.12 FHIR 1.5.4	<ul style="list-style-type: none"> The MAT has been updated to remove the NQF OID from the HQMF export.
10/2/23	6.11	QDM 1.5.12 FHIR 1.5.4	<ul style="list-style-type: none"> Replaced the authentication method used by MAT when querying VSAC. The TGT/ST workflow will be replaced with Basic Authentication header containing the user's VSAC API Key.
7/12/23	6.11	QDM 1.5.12 FHIR 1.5.4	<ul style="list-style-type: none"> QDM Measures: The 'Payer' value set has been updated to the 'Payer Type' value set for all QDM measures that meet the following criteria: <ol style="list-style-type: none"> The QDM measure was updated on or after January 1, 2023 AND The QDM measure was in a draft state at the time of the release on 7/13/2023 Note: All QDM measures created after the release will use the 'Payer Type' value set. The MAT has reverted the CQL-ELM translator from 2.10.0 to 1.5.12 to address an issue with measure exports.
6/29/23	6.11	QDM 2.10.0 FHIR 1.5.4	<ul style="list-style-type: none"> Renamed the default "Payer" value set to "Payer Type" in MAT CQL defaults for new QDM Measures Note: This update will be reflected in measures created or versioned after this release, it will not be reflected in measures that are in draft state at the time of this release. Replaced NQF field with CBE (Consensus Based Entity) <ul style="list-style-type: none"> Changed the label on the Measure Details tab from "Endorsed By NQF" to "Endorsed by CMS Consensus Based Entity" Changed the label on the Measure Details tab from "NQF Number" to "CBE Number" Changed the label on the human-readable export from "NQF Number" to "CBE Number" Changed the value of the Endorsed By field from "NQF" to "CMS Consensus Based Entity" "NQF Number" is replaced with "CBE Number" on the error messages QDM Measures: MAT has been updated to use CQL-ELM Translator 2.10.0. More information can be found here.

2023 Bonnie

Bonnie Prior

Date	Version		CQL to ELM Translator	Features
10/2/23	4.3.1			<ul style="list-style-type: none"> Replaced the authentication method used by Bonnie Prior when querying VSAC. The TGT/ST workflow will be replaced with Basic Authentication header containing the user's VSAC API Key.

Bonnie QDM

Date	Version	CQL to ELM Translator	Features
11/30/23	5.1.5		<ul style="list-style-type: none"> Updates to support the is operator to the QDM Entities (PatientEntity, CarePartner, Organization, etc.) resulted in a decreased test case coverage percentage. The issue was resolved without impacting support of the is operator to the QDM Entities. BONNIEMAT-1644
10/2/23	5.1.4		<ul style="list-style-type: none"> Replaced the authentication method used by Bonnie QDM when querying VSAC. The TGT/ST workflow will be replaced with Basic Authentication header containing the user's VSAC API Key.
7/31/23	5.1.4		<ul style="list-style-type: none"> Bonnie QDM has been updated to differentiate between Measure Observations on the test case info and edit pages. Updated Excel export functionality to use DENOM_OBSERV and NUMER_OBSERV for Ratio Measure Patients
7/12/23	5.1.3		<ul style="list-style-type: none"> CQM-models are updated to support the "is" operator for QDM entities. Bonnie QDM has been updated to use CQM Execution Engine 4.1.3. More information can be found here.

Bonnie FHIR

Date	Version	CQL to ELM Translator	Features
10/2/23	6.2.5		<ul style="list-style-type: none"> Replaced the authentication method used by Bonnie FHIR when querying VSAC. The TGT/ST workflow will be replaced with Basic Authentication header containing the user's VSAC API Key.

2022 MADiE

Date	Version	CQL to ELM Translator	Features
12/14/22	1.0.2	2.2.0	<ul style="list-style-type: none"> Updates were made throughout MADiE to update display and navigation for 508 compliance. Users can now search for a CQL Library on the Libraries tab. Users can now search by Library name. On the Details tab for a measure, when the user clicks Discard Changes, the page will not refresh and will not save the changes. On the Details tab for a measure, the user will not be prompted to Save or Discard changes unless they navigate to a new tab in MADiE. Population and Scoring fields now display default values in the dropdown.
12/14/22	1.0.2	2.2.0	<ul style="list-style-type: none"> MADiE only accepts measure types that are present in the HL7 measure type list. These types include Outcome, Patient Reported Outcome, Process and Structure. Measures that are transferred from MAT to MADiE that are not one of the above types will automatically be mapped to an accepted measure type. Users can update the measure type after it has been transferred to MADiE.

Date	Version	CQL to ELM Translator	Features
			<ul style="list-style-type: none"> When a measure is transferred from MAT to MADiE it now retains the version number for the primary CQL Library. For measures that have previously been transferred, users can make any change to the CQL and then save the CQL to update the primary CQL library version to the correct version number. When a measure is transferred from MAT to MADiE the correct measure version number now displays on the Measure List page. Error messages have been updated for consistency throughout MADiE. When a user changes the population basis on the Population Criteria page, a warning will display notifying the user that test cases will also need to be updated accordingly to match the population basis selection. The Scoring Unit field on the Population Criteria section now allows users to type in the field to filter the units displayed for selection. The Population Criteria tab will display when measure CQL contains functions returning intervals. Previously, the page may not have fully loaded. The Details tab under Test Cases has updated field labels. Test Case Title now displays as Title, Test Case Description now displays as Description, and Test Case Series now displays as Group. When new populations are added or the scoring or population basis has changed, the expected results for all test cases will be executed and receive pass/fail results for all populations. On the Test Case list page, users will now be able to review coverage percentage after selecting the Execute Test Cases button. Previously, users may have received a non-numeric coverage percentage. When multiple Population Criteria are created, users will now be able to view the pass/fail results for each population criteria on the Test Case list page.
12/7/22	1.0.1	2.2.0	<ul style="list-style-type: none"> Updates were made throughout MADiE to update display and navigation for 508 compliance. The View/Edit dropdown has been updated for users who do not own the CQL Library to prevent them from clicking on the Draft and Version actions. Validation messages are now displaying correctly when a user is editing a CQL Library, and they make updates to any field other than the CQL Editor. Validation messages are now displaying correctly when a user fails to enter required information when creating a new CQL Library. Users will now receive an error upon measure creation if the Measurement Period start and end dates are the same. The validation message alerting users they must enter a Measure CQL Library name upon measure creation has been updated. The Population Criteria section has been updated for users who do not have edit access from clicking on any editable fields. When users edit the Measure Library Name, and if no CQL errors are present upon saving, the updated Measure Library Name will now be reflected in the Measure CQL. The Details tab for Measures now alerts users to save or discard changes when navigating away without saving. It now includes an option to Discard Changes. Users can now enter information about Risk Adjustment for their measures on the Details tab. Users can now navigate from the Edit measure page to the Measure List page by clicking on the Back button.

Date	Version	CQL to ELM Translator	Features
			<ul style="list-style-type: none"> When searching for a measure, the search results are retained when a user selects the Next button. When searching for a measure, the search results are retained when navigating to additional pages of results. Styling for buttons throughout MADiE have been updated for consistency. Validation messages throughout MADiE have been updated for consistency. The design of the Test Cases tab has been updated to remain consistent with other tabs within MADiE. Styling for links throughout MADiE have been updated for consistency. Dropdown fields throughout MADiE have been updated to use type ahead functionality. The Details tab for Measures has been updated to remain consistent with other tabs within MADiE.
12/5/22	1.0.1	2.2.0	<ul style="list-style-type: none"> The Test Case JSON editor has been updated to enable the Save button when the page has loaded . Users can now use the Discard Changes button to clear the data from the JSON Test Case Editor. Users are now able to delete test cases. When the measure group is updated, test cases can now be executed to view updated tests results. In some instances, users received a non-numeric Coverage percentage. This has been updated. Users can now view the pass and fail results for all population criteria on the Test Case List page. When entering a value for Measure Observation, users can now include decimals. Users can now execute test cases that only contain warnings. JSON that contains errors will continue to prevent users from executing test cases until the errors are resolved. Users can now execute test cases against Stratifications and Measure Observations. The Population Basis and Scoring Type now display on the Test Case screen to improve usability when creating test cases. Errors generated upon test case execution are now cleared, when the errors are resolved, and the test case is executed.
11/16/22	1.0.0	2.2.0	<ul style="list-style-type: none"> Initial release of the Measure Authoring and Development Integrated Environment (MADiE) Minimally Viable Product (MVP)

2022 MAT

Date	Version	CQL to ELM Translator	Features
11/16/22	6.10	QDM 1.5.3 FHIR 1.5.4	<ul style="list-style-type: none"> Measure owners have the ability to transfer FHIR measures from MAT to MADiE. Newly created FHIR measures and libraries now reference the updated versions of the following libraries: <ul style="list-style-type: none"> FHIR Helpers, called FHIRHelpers, version 4.1.000 Supplemental Data Elements, called SupplementalDataElementsFHIR4, version 3.0.000 MAT Global, version 7.0.000 Any existing FHIR measure or library will need to be updated by a user with edit access, to incorporate these newer versions of the FHIR Helpers, Supplemental Data Elements and MAT Global libraries. When incorporating these updated versions of libraries, users may need to update existing measure logic to resolve error messages.
7/18/22	6.10	QDM 1.5.3 FHIR 1.5.4	<ul style="list-style-type: none"> QDM measures converted to FHIR measures after the release will reference the updated version of the libraries. For QDM/CQL measure packages, file names for the primary measure CQL, XML, JSON and HQMF files have been updated to include the revision number of '.xxx' at the end of the file name. This update corrects a known issue of the file names in the package not including the revision number by aligning with the naming convention used in the HQMF file.
4/27/22	6.10	QDM 1.5.3 FHIR 1.5.4	<ul style="list-style-type: none"> Corrects an issue with users accessing the Value Set Authority Center (VSAC) through authentication with the Unified Medical Language System (UMLS) using their UMLS API Key.
1/25/22	6.10	QDM 1.5.3 FHIR 1.5.4	<ul style="list-style-type: none"> Security update, removal of log4j.

2022 Bonnie

Bonnie Prior

Date	Version	CQL to ELM Translator	Features
7/19/22	4.3.1		<ul style="list-style-type: none"> Updated Bonnie Privacy Policy link

Bonnie QDM

Date	Version	CQL to ELM Translator	Features
7/19/22	5.1.2		<ul style="list-style-type: none"> Updated Bonnie Privacy Policy link

Bonnie FHIR

Date	Version	CQL to ELM Translator	Features
12/13/22	6.2.5		<ul style="list-style-type: none"> JSON export files for test cases exported after this release have been updated. <ul style="list-style-type: none"> The MeasureReport resource has been removed from JSON export files exported after the release. The QI-Core Patient Profile URL has been added to all patients. This will prevent users from having to add the URL to test cases exported after the Bonnie FHIR 6.2.5 release. The Medical Record Identifier has been added to all patients. This will prevent users from having to add the identifier to test cases exported after the Bonnie FHIR 6.2.5 release. To generate test cases with these updates, Bonnie FHIR users can choose to reexport the .zip file and save it to their desired location
10/17/22	6.2.4		<ul style="list-style-type: none"> When the gear icon on the measure page is selected it now displays an Export button. The Export button will only display for measures that have test cases and allows users to export test cases from Bonnie FHIR. The export file is a .zip file that contains <ul style="list-style-type: none"> A single JSON file with all test cases for the measure in one file Individual JSON files for each test case for the measure Bonnie FHIR users will be able to export the .zip file and save it to their desired location Following the release of MADiE MVP, slated for November, users will be able to copy and paste the contents of the JSON files into the MADiE test case editor for MADiE
7/19/22	6.2.3		<ul style="list-style-type: none"> Updated Bonnie Privacy Policy link

2021 MAT

Date	Version	CQL to ELM Translator	Features
11/23/21	6.10	QDM 1.5.3 FHIR 1.5.4	<ul style="list-style-type: none"> Corrects a production issue for QDM/CQL measures. The HQMF file will be updated to reflect the correct file name formats when referencing CQL, JSON and XML files included in the Measure Export zip file.
11/10/21	6.10	QDM 1.5.3 FHIR 1.5.4	<ul style="list-style-type: none"> Corrects a production issue, causing Human Readable to include the Measure Observation metadata field in proportion and cohort measures. Corrects a production issue, causing nested CQL Libraries to be excluded from the Measure Export's FHIR Bundle.
09/29/21	6.10	QDM 1.5.3 FHIR 1.5.4	<ul style="list-style-type: none"> The Timeout in the MAT has increased from 15 to 30 minutes <ul style="list-style-type: none"> The Inactivity Warning has increased from 10 to 25 minutes For FHIR Measures and Libraries, the CQL to ELM Translator has been upgraded to version 1.5.4 <ul style="list-style-type: none"> QDM Measures and Libraries still use version 1.5.3 To address potential security vulnerabilities: <ul style="list-style-type: none"> MAT was upgraded to Tomcat 10 MAT microservices were upgraded to Java 15
09/07/21	6.10	QDM 1.5.3 FHIR 1.5.2	<ul style="list-style-type: none"> FHIRHelpers includes being removed by unused filtering but is required by Translator FHIR - The 1st Error returned from the CQL-to-ELM Translator is not displayed in the MAT Repair CQL Libraries with null Finalized Date Update URI for CDCREC CQL Workspace, General Information data is not displayed with syntax error in the CQL
08/09/21	6.10	QDM 1.5.3 FHIR 1.5.2	<ul style="list-style-type: none"> Implement Bonnie QDM 5.6 Prod Login from MAT (or Hide it) FHIR: Add Referenced Libraries to HR Export MAT Deployment support MAT logout requires multiple attempts Update MAT Public Facing Site with Release Notes for Q3 Rel1 Release
07/22/21	6.10	QDM 1.5.3 FHIR 1.5.2	<ul style="list-style-type: none"> Validate Codes containing "/". Display a clearer error message when VSAC cannot retrieve a code Correction for CQL Errors Failing to Display on QDM Measure Load in CQL Editor Now able to add CQL Library in includes section (helper UI) when search is not specific to Library name FHIR Measures: Do not require that all functions have a parameter Allow user to create new measure when the CQL library name provided already exists, after they've corrected the library name Timezone Display on History UI should be UTC FHIR - Function/Define Return Type no longer disappears on Save for one measure FHIR - Includes UI: Adding FHIRHelpers no longer adds nonexistent version Harp support page should display for a revoked user With FHIR toggle Off, New CQL Libraries create FHIR model

Date	Version	CQL to ELM Translator	Features
06/23/21	6.10	QDM 1.5.3 FHIR 1.5.2	<ul style="list-style-type: none"> • Support for QDM 5.6 • Move to QDM CQL update • QDM Ratio Measure Enhancements • QDM CV Measure Enhancements
04/01/21	6.04	QDM 1.4.8 FHIR 1.5.2	<ul style="list-style-type: none"> • Clarifications were added to some warnings and messages • Addressed a FHIR issue of unprintable and other Unicode characters included in FHIR Measures that were preventing packaging. • Changed MySQL8 DB Configuration to allow a larger Unicode character set • MAT uses UTF-8 encoding • FHIR CQL to ELM translator updated to 1.5.2 • QDM CQL to ELM translator updated to 1.4.8 • QDM CQL to ELM translator updated to 1.4.8 • Still CQL 1.4; No QDM changes; No export artifact changes. • All retrieves are now included in the data requirements when FHIR Measures contain multiple Direct Reference Codes using the same Resource. • Correction to URL used for measure type in JSON and XML FHIR export files • Logging and Configuration changes to improve MAT performance • eCQM ID Generation enhancement
3/25/21	6.04	QDM 1.4.8 FHIR snapshot	<p>Emergency MAT 6.04 Performance Release</p> <p>No release notes were needed. An email was sent to all users.</p> <p>Dear Measure Authoring Tool (MAT) Users,</p> <p>Over the last week, there have been several reports of performance issues or slowness when accessing measures in the MAT. To improve performance, a maintenance release of the Measure Authoring Tool will occur at 8AM ET, Friday, March 26th, 2021.</p> <p>The MAT will continue to be available to users during this time. However, we encourage you to save your recent work. The version of the MAT will not change as this is a maintenance release.</p> <p>The MAT can be accessed from the MAT public web site here. The MAT support team will be available to answer questions and to provide user support following the release. Please continue to contact MAT Support through the Bonnie and MAT Issue Tracker here: https://oncprojecttracking.healthit.gov/support/projects/BONNIEMAT/su mmmary.</p> <p>Thank you,</p> <p>The MAT Support Team</p>

Date	Version	CQL to ELM Translator	Features
2/29/21	6.04	QDM 1.4.8 FHIR snapshot	<ul style="list-style-type: none"> ● FHIR Naming Standards ● FHIR Export Artifacts Naming Standards ● Included Retrieves in FHIR Human Readable export data requirements ● Removed a tooltip from the CQL Editor that obscured error message displays

2021 Bonnie

Bonnie Prior

Date	Version	CQL to ELM Translator	Features
7/19/21	v4.2.1		<ul style="list-style-type: none"> ● Updating Bonnie Prior to be QDM 5.5
8/11/21	v4.3.0		<ul style="list-style-type: none"> ● Authenticate with HARP Account ● Private Accounts <ul style="list-style-type: none"> ○ Can only be accessed by one individual ● Group Accounts <ul style="list-style-type: none"> ○ Can be accessed by many individuals ● Switching between group accounts and private account ● Uploading measures to group accounts and private account ● Add/edit patients to groups account and private account ● Adding session management to Bonnie <ul style="list-style-type: none"> ○ Bonnie will time out after 15 min of inactivity ○ A warning message will appear after 10 min of inactivity
8/13/21	v4.3.0		<ul style="list-style-type: none"> ● Transitioned Bonnie Prior to be Hosted on HCQIS environment
9/8/21	v4.3.0		<ul style="list-style-type: none"> ● Fixes for Patient conversion ● Updates to Precision for converted patients ● Carrying over Patient description on conversion

Bonnie QDM

Date	Version	CQL to ELM Translator	Features
1/28/21	v4.2.1		<ul style="list-style-type: none"> ● Ability to export patients in FHIR patient format ● Resolves how attributes of type Ratio display in the user interface ● Allows import of measures using the data element 'physical exam, recommended' ● Resolves an issue preventing uploading of measures that use HQMF subtemplates
4/1/21	v4.2.1		<ul style="list-style-type: none"> ● Updates to character encoding so that it matches UTF8 ● Connecting to virus scanning service

Date	Version	CQL to ELM Translator	Features
7/19/21	v5.0		<ul style="list-style-type: none"> ● Authenticate with HARP Account ● Private Accounts: Can only be accessed by one individual ● Group Accounts: Can be accessed by many individuals ● Switching between group accounts and private account ● Uploading measures to group accounts and private account ● Add/edit patients to groups account and private account ● Adding session management to Bonnie <ul style="list-style-type: none"> ○ Bonnie will time out after 15 min of inactivity ○ A warning message will appear after 10 min of inactivity ● Updated to QDM 5.6 ● Updated to CQL 1.5 ● Deleting of Deprecated QDM 5.5 elements and attributes
8/13/21	v5.0		<ul style="list-style-type: none"> ● Transitioned to be hosted on HCQIS Environment
10/27/21	v5.1.0		<ul style="list-style-type: none"> ● Extend the application timeout from 15 to 30 minutes. ● Ability to export all test patients from a measure into a zip file. ● Ability to import the zip file of test patients into another Bonnie measure. ● Ability to delete all test patients for a measure.
12/3/21	v5.1.1		<ul style="list-style-type: none"> ● Update the CQL-Execution Engine to 2.3.3 ● Support for the “is” operator ● Updated Bonnie to properly handle and parse ELM files that contain comments

Bonnie FHIR

Date	Version	CQL to ELM Translator	Features
1/12/21	v6.0.1		<ul style="list-style-type: none"> ● Added support for more reference attributes ● Added support for modifierExtension attribute ● Updated UI design for Extension attribute ● Ability to share specific/all test patients across measures
1/28/21	v6.1.0		<ul style="list-style-type: none"> ● Ability to import FHIR Patient zip exported from Bonnie QDM
2/11/21	v6.1.1		<ul style="list-style-type: none"> ● Add support for updated FHIR naming standards ● Perform calculations to use the end of day when 12/31 is utilized ● Alphabetically order dropdown menus
4/1/21	v6.1.2		<ul style="list-style-type: none"> ● Add support for parsing and calculating Supplemental Data Elements <ul style="list-style-type: none"> ○ Note, you must select ‘Include Supplemental Data Element Calculation’ on measure upload ● Additional QI-Core Attribute support ● Expanded Character set support ● Security updates
8/11/21	v6.2.0		<ul style="list-style-type: none"> ● Authenticate with HARP Account ● Private Accounts <ul style="list-style-type: none"> ○ Can only be accessed by one individual ● Group Accounts <ul style="list-style-type: none"> ○ Can be accessed by many individuals ● Switching between group accounts and private account ● Uploading measures to group accounts and private account ● Add/edit patients to groups account and private account

Date	Version	CQL to ELM Translator	Features
8/11/21	v6.2.0		<ul style="list-style-type: none"> Adding session management to Bonnie <ul style="list-style-type: none"> Bonnie will time out after 15 min of inactivity A warning message will appear after 10 min of inactivity Update to FHIR patient upload to allow users experiencing the “File must be a zip file.” Error to upload FHIR patients. (example ticket BonnieMAT-809) Add support for additional QI Core attributes
8/13/21	v6.2.0		<ul style="list-style-type: none"> Transitioned to be hosted on HCQIS Environment
9/27/21	v6.2.1		<ul style="list-style-type: none"> Link Reference without spawning a card Allow Encounter.Diagnosis to be a cardinality of 0..* Allow Observation.component to be a cardinality of 0..* Allow Encounter.location to be a cardinality of 0..* Support CodeableConcept in Extension Support Negation Rationale for communication, MedicationRequested, and ServiceRequested Added support for additional QI Core attributes
12/21/21	v6.2.2		<ul style="list-style-type: none"> Update the CQL-Execution Engine to 2.3.3 Support for the is operator Updated Bonnie to properly handle and parse ELM files that contain comments Extend the application timeout from 15 to 30 minutes.

Prior 2020 MAT Releases

Date	Version	Notes
3/20/20	v5.8.2	
5/6/20	v5.9.0	
6/16/20	v5.9.1	
9/24/20	v6.0 (QDM)	<ul style="list-style-type: none"> Various changes to MAT UI. Please refer to the release notes. MAT 5.9.1 goes away
10/07/20	6.0 FHIR (Beta)	<ul style="list-style-type: none"> FHIR (Beta) Only certain users will have access to these features.
10/20/20	v6.01	<ul style="list-style-type: none"> HARP URL Updates VSAC Authentication API Updates QDM Defect Corrections
10/26/20	v6.02	<ul style="list-style-type: none"> HARP URL Updates
12/15/20	V6.03	<ul style="list-style-type: none"> 503 Updates

Prior 2020 Bonnie Releases

Date	Version	CQL to ELM Translator	Features
8/4/20	Bonnie	v4.1	
9/15/20	Bonnie	4.1.1	<ul style="list-style-type: none"> Security fixes Rails upgrade Misc bug fixes
Mid-October 2020	Bonnie Prod and Bonnie Prior	4.1.2	<ul style="list-style-type: none"> VSAC Authentication API Updates
Mid-October 2020	Bonnie FHIR	UAT	<ul style="list-style-type: none"> Create Patients Execution (subject to MITRE conversation 7/8)

Date	Version	CQL to ELM Translator	Features
Early November, 2020	Bonnie FHIR	5.0	<ul style="list-style-type: none"> • Upload/Update measure • Create Patients • Execution
Q4	Bonnie Patient Conversation	5.1	<ul style="list-style-type: none"> • Ability to convert patient from QDM to FHIR
12/21/20	Bonnie FHIR	v6.0	