Publicly Accessible Release Schedule

You can find MADiE Release Notes here: https://www.emeasuretool.cms.gov/

2026 MADiE

Date	Version	CQL to ELM Translator	Features

10/13/2026	4.1.1	QDM: 5.3.0
		
		QI-Core: 5.3.0
			• **FHIR Measures:**
			  ○ Composite measures can be exported, versioned, and viewed in the Human Readable format when the Measure Type field is left blank.
			  ○ Composite measure workflows for managing components and test cases have been enhanced.
			• MADiE Administrator functionality has been updated.
			• MADiE has been updated to use CQL-ELM Translator 5.3.0. More information can be found here.
			• Resolved Known Issues:
			  ○ **US Quality Core Measures:**
			  ▪ Users are unable to create and/or use any references to a US Quality Core Profile in the test case builder. (MADIE-2407)
			  ▪ Measure export is blocked when ballot version NPM libraries are used in the measure. (MADIE-2411)
			  ▪ Test case patient references are not preventing duplicate patients.

9/29/2026	4.1.0	QDM: 5.1.0
		
		QI-Core: 5.1.0
			• MADiE has been updated to support the creation of FHIR composite measures, introducing the first phase of composite measure functionality.
			• **FHIR Measures**: Draft measure exports now align with Universal Realm QM IG STU2 structural requirements for supplemental data guidance, risk adjustment variable guidance, and effective data requirements reference.
			• Resolved Known Issues:
			  ○ **US Quality Core Measures:**
			  ▪ MADiE adds a second US Core using statement when drafting a versioned US Quality Core stand-alone library.
			  ▪ When **"All Profiles"** is selected on the **Available Elements** tab, MADiE will display several **"Cross-version Profile"** profiles. These profiles can be safely disregarded and **do not require any action from the user**.
			• **QDM and QI-Core Measures:** MADiE has been updated to remove the extra whitespace that appeared before and after bulleted and numbered lists in draft measures. (MADIE-2372).

9/16/2026	4.0.1	QDM: 5.1.0 QI-Core: 5.1.0	• Users can now save CQL with any using statement, regardless of the selected measure model. MADiE no longer modifies using statements during save. • **US Quality Core Measures:** Unsupported nested sliced extensions are now filtered from the Attributes dropdown, preventing unsupported types such as Address and ContactPoint from appearing as selectable options. • MADiE Administrator functionality has been updated. • MADiE has been updated to use Liquid Templates 0.5.6. More information can be found here. • Resolved Known Issues: ○ **US Quality Core Measures:** Test case resources that use references defined by the US Quality Core Implementation Guide as version-specific will fail validation. For example, if a measure includes a Claim resource that references an Insurance Coverage resource, the test case will incorrectly fail validation when the Coverage reference is evaluated.

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			Work Around: This issue will be resolved in MADiE 4.0.1, which is currently targeted for release on September 15, 2026. Until that release, users may **ignore the validation error**. If users need to execute test cases before the issue is resolved, they can select the **"EXECUTE TEST CASES REGARDLESS OF VALIDATION STATUS"** checkbox and click **Save** to proceed with test case execution. ○ **US Quality Core Measures:** The **HL7 links** on the **Available** profiles tab are currently not opening the associated **US Quality Core** profile pages. These links are provided for reference purposes only, and **no action is required by the user**. Users who need to review the profile information can access the correct US Quality Core profiles directly at the following URL: https://fhir.org/guides/onc/us-quality-core/en/profiles.html.
9/1/2026	4.0.0	QDM: 5.1.0 QI-Core: 5.1.0	• MADiE now supports the complete US Quality Core v0.5.0 workflow, including measure creation, drafting QI-Core measures into US Quality Core measures to enable continued development, measure authoring and editing, test case creation, validation, execution, measure export, and test case export. **Note:** For detailed information on how to convert QI-Core measures and test cases into US Quality Core, see the 'Converting an Existing QI-Core Measure to US Quality Core' document on the Training & Resources tab of the public website. • MADiE has been updated to allow users to reference NPM Common Libraries when authoring measures and execute test cases that include them. **Note:** Executable exports will include NPM Common Libraries, but these libraries will not be included in publishable exports. • The measure and library action center icons have been updated. • MADiE has been updated to use CQL-ELM Translator 5.1.0. More information can be found here. • Resolved Known Issues: ○ FHIR measure test cases received validation errors when using **DeviceRequest.doNotPerform**. (MADIE-2395)
8/18/2026	3.0.10	QDM: 5.0.0 QI-Core: 5.0.0	• MADiE now keeps sessions active across multiple tabs, provides a warning before timeout with an option to stay signed in, and synchronizes session activity and logout status across all open tabs. (MADIE-1554, MADIE-1623) • Users automatically signed out due to inactivity will now be returned to the page they were viewing when they sign back in, allowing them to quickly resume their work without losing their place. • Users who access MADiE through a direct link while not logged in will now be taken directly to their requested page after signing in, instead of being redirected to the Measure List. • **QI-Core Measures:** Users can now mark FHIR measures as Telehealth-eligible. This designation is saved with the measure and included in exported JSON, XML, and human-readable files. (MADIE-2382) • **QI-Core Measures:** MADiE has been updated to use HAPI FHIR version 8.10.1. More information can be found here.

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8/4/2026	3.0.9	QDM: 5.0.0 QI-Core: 5.0.0	• **QI-Core Measures:** ○ Choice-type attributes have been updated to display an **"[x]"** after the attribute name in both the attribute selector and the navigation tabs. (MADIE-2366) ○ The Available Elements tab has been updated with a clearer Add button, profile count tracking, helpful tooltips, and improved pagination placement. (MADIE-2376) ○ The Added Elements table has been updated to always display the. Edit, Clone, and Delete actions. Profile names sorting was also added to allow users to sort alphabetically. (MADIE-2376) • **QDM Measures:** MADiE has been updated to use cqm-reports 4.1.7. More information can be found here. (MADIE-2390 • **Resolved Known Issues:** MADiE prevented users from saving measures that included valid special characters in measure names. (MADIE-2398)
7/21/26	3.0.8	QDM: 5.0.0 QI-Core: 5.0.0	• **QI-Core Measures:** ○ The Available Profile Table has been enhanced to include the ability to switch between all profiles and measure-relevant profiles, view profile counts, and retain filter preferences per measure. (MADIE-2376) ○ Links were added to access accurate HL7 profile documentation directly out of MADiE from Available Elements, Added Elements, and Edit Element views. (MADIE-2376) ○ Dropdowns were updated to display options alphabetically for easier navigation, with Custom Code always displayed first where applicable. (MADIE-2376) • MADiE has been updated to use CQL-ELM Translator 5.0.0. More information can be found here.
7/9/26	3.0.7	QDM: 4.8.0 QI-Core: 4.8.0	• MADiE has been updated to use FQM-Execution Engine 1.8.5. Release notes can be found here. (MADIE-2388) • MADiE has been updated to use CQM-Execution Engine 4.4.3. Release notes can be found here. (MADIE-2388) • **QI-Core Measures:** MADiE has been updated to display episode-level details directly within the Expected/Actual view for test cases related to measure observations. (MADIE-2349)
6/23/26	3.0.6	QDM: 4.8.0 QI-Core: 4.8.0	• MADiE has been updated to display the user's first and last name as well as the HARP ID on transfer, share, unshare and history screens for both measures and libraries. • **QI-Core Measures:** ○ MADiE has been updated to generate certain QI-Core attributes (e.g., coverage.payor) as arrays to meet base FHIR validation requirements, even when only one value is present. (MADIE-2366) ○ An Expand Populated Fields option for attributes with sub-attributes has been added, automatically expanding fields with data and collapsing those without. (MADIE-2376) ○ MADiE now supports deleting multi-cardinality sub-attributes, allowing users to remove entries or clear fields directly within the UI. ○ Users can add or clone attributes when multiple cardinality is allowed to manage repeatable attributes. ○ Users can clone a profile, copying all the attributes in the profile to the new profile to manage repeatable profiles. • Large sets of terminology data are now handled in smaller batches, reducing the likelihood of timeouts and ensuring users can more consistently execute, export, and edit test cases without interruption. (MADIE-2387)

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			• **QI-Core Measures:** Enhancements have been made to test case execution for QI-Core measures to better handle Patient resources with invalid references. Additional messaging has been added across the edit, validation, and execution screens and validation will automatically re-run when test cases are imported, cloned, or copied. (MADIE-2362) • MADiE has updated how code systems are recognized and used in validation for CQL and test cases by refreshing periodically from VSAC and storing the code systems in the MADiE database. • **QI-Core Measures:** MADiE has been updated to periodically refresh expansion requests for FHIR-based profile value sets used in test cases from tx.FHIR as well as VSAC and to store the requests in the MADiE database.
6/11/26	3.0.5	QDM: 4.8.0 QI-Core: 4.8.0	• CMS IDs are now displayed and exported as four-digit values, with leading zeros added when needed (for example, "2" appears as "0002"). **Note:** While all measures show the padded CMS ID in the UI, only export packages generated from draft measures, or versions created after this release, include the four-digit format. Exports created from measures versioned before this release remain unchanged. (MADIE-2364) • **QI-Core Measures:** A QI-Core Patient will now be automatically added by default to the Added tab and the test case JSON when creating a new test case. • MADiE has been updated to use CQL-ELM Translator 4.8.0 for both QDM and QI-Core. More information can be found here. • MADiE has been updated to use Liquid Templates 0.5.5. More information can be found here. • MADiE has been updated to use HAPI FHIR version 8.10.0. More information can be found here. • MADiE Administrator functionality has been updated.

5/26/26	3.0.4	QDM: 3.29.0
		QI-Core: 4.7.0
			• **QI-Core Measures:**
			  ○ Attributes that include sub-attributes now display Expand All and Collapse All buttons in the test case builder. (MADIE-2376)
			  ○ In the test case builder, duplicate profile options were previously appearing in the Available Elements list. Each profile now appears only once (with separate entries only when both QI-Core and US-Core versions legitimately exist). (MADIE-2376)
			  ○ Codes used in measure CQL now appear as selectable options in valueset/direct reference code drop-down fields. (MADIE-2375
			• **QDM Measures:** Diagnosis fields display more clearly in the test case builder, with labels now properly aligned. (MADIE-2365

5/12/26	3.0.3	QDM: 3.29.0 QI-Core: 4.7.0	• **QI-Core Measures:** MADiE has been updated to use CQL-ELM Translator 4.7.0. More information can be found here. • **QI-Core Measures:** MADiE has been updated to use Liquid Templates 0.5.4. More information can be found here. (MADIE-1621, MADIE-1622 • MADiE measure exports now include the aggregateMethod extension populated with coded values (valueCode) from the HL7 Measure Aggregate Method ValueSet, replacing display-name strings to ensure conformance with the CQF Measures profile. (MADIE-2367)
4/30/26	3.0.2 Maintenance Release	QDM: 3.29.0 QI-Core: 4.6.0	• MADiE was updated to accommodate a recent VSAC change by modifying value set expansion requests to properly include draft value sets, restoring users' ability to execute test cases. MADIE-2374

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4/28/26	3.0.2	QDM: 3.29.0 QI-Core: 4.6.0	• **QI-Core Measures:** MADiE has been updated to use CQL-ELM Translator 4.6.0. More information can be found here.
4/14/26	3.0.1	QDM: 3.29.0 QI-Core: 4.5.0	• **QI-Core Measures:** The Test Case Builder has been updated to provide clearer feedback when managing profiles. • MADiE Administrator functionality has been updated. • **QI-Core Measures:** MADiE has been updated to use CQL-ELM Translator 4.5.0. More information can be found here. • Exported test cases for CV measures with observations now use the correct population code **"measure-observation"** instead of **"measure-population-observation"** ensuring exported results align with HL7 terminology expectations and improving consistency and accuracy for teams reviewing or validating measure test cases. (MADIE-2351) • Duplicate action log entries have been consolidated into a single record, preventing missing data in the Share/Unshare pop-ups and ensuring users can consistently view accurate history on affected measures. (MADIE-2355)
3/17/26	3.0.0	QDM: 3.29.0 QI-Core: 4.4.0	• **QI-Core Measures:** MADiE has been updated to allow users to create and edit QI-Core test cases through a guided interface that offers an alternative to working directly in JSON, while still allowing full access to JSON editing when needed. The Test Case UI Builder is offered as a beta release and designed to support the complete QI-Core workflow, though some uncommon scenarios may still need refinement. We welcome user feedback to help us enhance the UI Builder in future releases. • MADiE has been updated to use HAPI FHIR version 8.8.0. More information can be found here. • **QI-Core Measures:** MADiE has been updated to use CQL-ELM Translator 4.4.0. More information can be found here. • MADiE was displaying inconsistent spacing in the Human Readable for rich text–enabled metadata fields. (MADIE-2344)

3/4/26	2.3.8	QDM: 3.29.0
		
		QI-Core: 4.2.0
			• **QI-Core Measures:** MADiE has been updated to use CQL-ELM Translator 4.2.0. More information can be found here.
			• **QI-Core Measures:**
			  ○ Test cases execution was being affected when a test case included resources with invalid references. MADiE has been updated to exclude any unresolved resources before execution, without altering the saved test case data. Users will also receive informative, non-blocking warnings when saving test cases that contain invalid references. (MADIE-2338)
			  ○ Draft measure exports included extra characters at the end of the title field and versioned measures added an unintended line break to the title field in the XML file. (MADIE-2341)

2/17/26	2.3.7	QDM: 3.29.0 QI-Core: 3.29.0	• MADiE has been updated to allow users to compare two versions of the CQL and Human Readable content for a measure or library. The Compare Versions function will identify changes between the two versions. (MADIE-2278) • MADiE has been updated to support case insensitive handling of HARP IDs, resolving previous issues where users could not transfer measure or library ownership due to mixed case HARP ID formatting. (MADIE-2335)
2/4/26	2.3.6	QDM: 3.29.0 QI-Core: 3.29.0	• MADiE has been updated to display the measure or library owner. The measure owner's name will display on the Shared Measures tab, All Measures tab, and the Measure Detail screen. The library owner's name will

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			display on the Shared Libraries tab, All Libraries tab, and the Library Detail screen. (MADIE-2245) • **QI-Core v6.0.0 Measures:** MADiE has been updated to display a test case coverage percentage tooltip after execution has run which explains how the percentage relates to clause counts when users hover over the coverage percentage. • **QI-Core Measures:** MADiE has been updated to allow users to synchronize their test case JSON with the test case UI by updating the "family" field in the JSON to match the GROUP entered in the UI and the "given" field to match the TITLE from the UI. • **QDM Measures:** MADiE has been updated to allow users to add the following Participant attributes without requiring all fields to be completed first: o Organization o CarePartner o Location o PatientEntity o Practitioner The Add button will now remain enabled at all times, allowing users to enter these attributes in any order. (MADIE-2307) • **QDM Measures:** The export process has been updated to include value sets that match an alias within the measure. (MADIE-2327)
1/21/26	2.3.5	QDM: 3.29.0 QI-Core: 3.29.0	• The Manifest dropdown in MADiE has been updated to display the manifest title instead of the ID and lists all options in descending order by publication date. (MADIE-1962) • **QI-Core Measures:** MADiE has been updated to display the number of valid test cases over the total (e.g., 36/40) displayed directly below the percentage of valid test cases. • **QI-Core v6.0.0 Measures:** MADiE now includes the resource ID for all error, warning, and info messages in the message format alongside the description. • MADiE has been updated to use HAPI FHIR version 8.6.1. More information can be found here.
1/6/26	2.3.4	QDM: 3.29.0 QI-Core: 3.29.0	• MADiE has been updated to include a locking feature to prevent accidental overwrites and ensure data integrity. Measures, test cases, and libraries will be locked when a user is actively making edits. The lock feature will block other users from making changes until the lock is released. • **QI-Core Measures:** MADiE has been updated to use Liquid Templates 0.5.3. More information can be found here. • Resolved Known Issues: o Test case date shifting operations resulted in errors when test cases included datetime fields that were null or undefined. (MADIE-2309) o **QI-Core Measures:** For ratio and continuous variable measures, MADiE does not display correct test case results after test cases are copied to another measure. (MADIE-2329)

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12/10/25	2.3.3	QDM: 3.29.0	• MADiE has been updated to use HAPI FHIR version 8.4.0. More information can be found here. (MADIE-2301)

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		QI-Core: 3.29.0	• **QDM Measures:** QRDA test case export file names will continue to reflect the unique combination of test case group and title; the file names will no longer include an index number that was not aligned with test case. numbers displayed in MADiE. • Resolved Known Issues: ○ MADiE now displays consistent text formatting in measure details across the UI and Human Readable view. (MADIE-2312, MADIE-2320)

11/25/25	2.3.2	QDM: 3.29.0
		QI-Core: 3.29.0
			• MADiE has been updated to include a built-in Calculation Tool that lets users determine durations between dates and compute future or past dates by adding or subtracting time units. (MADIE-1861)
			• Users can now view the history of actions taken on measures and libraries by clicking on the “History” icon. The "History" popup screen will display a timestamped list of events and the HARP ID for the user responsible for each action.
			• Users can now unshare measures and libraries that are shared with them directly from their Shared Measures or Shared Libraries tab without needing to contact the measure/library owner or submit a help desk ticket.
			• To improve clarity around the transfer action, the Transfer Measure and Transfer Library popup screens now explicitly indicate that users are transferring measure/library ownership**.**
			• MADiE has been updated to include a new test case configuration setting allowing users to enable or disable the execution of test cases regardless of their validation status on the new “Execution Settings” tab. This feature is turned off by default, and a warning banner will display on the test case list page when this feature is turned on.
			• **QI-Core Measures:** When a user creates a QI-Core 6.0.0 draft from a QI-Core 4.1.1 or QI-Core 6.0.0 versioned measure, all associated test cases are automatically placed in a validation queue. Validation runs asynchronously, allowing users to continue working in the tool while results are saved and the draft is finalized.
			• MADiE has been updated to use Liquid Templates 0.5.2. More information can be found here. (MADIE-2282)
			• **Resolved Known Issues**
			  ○ **QDM Measures:**
			  ▪ The mismatch warning logic on the test case edit screen has been updated to improve accuracy and reduce unnecessary alerts by ignoring differences in display text. (MADIE-2316)
			  ▪ The Shift Dates feature has been updated to preserve Participant attribute (e.g., Practitioner, Organization, or Location) when modifying test case dates. (MADIE-2307)
			  ▪ MADiE has been updated to resolve a mapping issue affecting HCPCS codes, which caused incorrect code system identifiers to appear in QDM test cases. MADiE users must submit a ticket to the MADiE IT to request this fix be applied to any draft measure(s). (MADIE-2311)

10/1/25	2.3.1	QDM: 3.29.0 QI-Core: 3.29.0	• MADiE now allows the owner of a measure or library to transfer ownership of their measure or library to another user through the user interface. Users completing the request will need to know the HARP ID of the user you wish to transfer your measure or library to. • The "Measure CQL (View Only)" tab on the Edit Test Case screen has been renamed to "CQL", streamlining the tab layout and creating more

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			space for future enhancements, with no changes made to tab content or validation containers.
			• A new visual indicator has been added to the test case list for versioned QDM and QI-Core measures, helping users with edit access easily identify which test cases cannot be deleted. Test cases that existed prior to versioning now display a gray trash can icon, while newly added ones do not. This icon is only visible to users who own or have shared access to the measure and does not appear on draft measures.
			• For all newly created measures, the Risk Adjustment Variables (RAV) setting will now default to "Yes,". This change applies only to new measures and does not affect any existing ones.
			• MADiE has been updated to use FQM-Execution Engine 1.8.3. Release notes can be found here. (MADIE-2284)
			• MADiE has been updated to use CQM-Execution Engine 4.4.1. Release notes can be found here.
			  • Both **fqm-execution** and **cqm-execution**, which are built on **cql-execution**, have been updated to reflect a change in the underlying engine that now requires all value sets to be expanded during measure execution—even if they are not used in population criteria. This may lead to "Unable to resolve expected valueset" errors when executing QDM or QI-Core test cases if unused value sets are present. To avoid this issue, please ensure that all value sets defined in the CQL are actively used in the measure.
			  • MADiE has been updated to use CQL-ELM Translator 3.29.0. More information can be found here.
			  • Resolved Known Issues:
			  ○ Recent updates ensure that the aggregateMethod extension in measure exports now correctly uses valueCode instead of valueString, aligning with the QM IG STU4 and CQM UV STU1 specifications. This fix addresses compatibility issues for ratio and continuous variable measures, preventing exceptions during implementation and ensuring conformance with expected standards. (MADIE-2288)
			  ○ **QDM Measures:** Observation results may have been inaccurately shown in the interface for some measures despite correct execution outputs. This update ensures that test case results now reliably reflect calculated values. (MADIE-2293)
			  ○ The Steward and Developers dropdowns on the Measure Details screen in MADiE have been updated to reflect a naming change: the option previously labeled "The Joint Commission" now appears as "Joint Commission." To apply the updated name in existing measures, users will need to re-select the entry manually. (MADIE-2292)

9/17/25	2.3.0	QDM: 3.27.0
		QI-Core: 3.27.0
			• Several improvements have been made to the **Owned Measures**, **Shared Measures**, **All Measures**, **Owned Libraries**, **Shared Libraries**, and **All Libraries** tabs to enhance usability and organization (MADIE-1624):
			  ○ Measures and libraries are now nested with only the most recent draft or version displayed by default.
			  ○ Each tab now displays the number of top-level measures or libraries in parentheses (e.g., *Owned Measures (12)*).
			  ○ The following columns were added on the measure lists:
			  ○ **Status**: Displays the current status (e.g., *Draft*)
			  ○ **Shared:** Displays a green check icon if the measure is shared with other users
			  ○ **CMS ID**: Displays the CMS ID, if applicable

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			○ **Updated:** Displays the last updated date ○ The following columns were added on the library lists: ○ **Status**: Displays the current status (e.g., *Draft*) ○ **Shared:** Displays a green check icon if the library is shared with other users ○ **Updated:** Displays the last updated date ○ Measure list: The "Measure Name" column is now "Measure" ○ Library list: The "Name" column is now "Library" ○ Improved Sorting and Search: ○ All columns in both measure and library lists are now sortable by clicking the column header ○ The search function now scans all columns by default ○ Users can also filter by a specific column to narrow search results • Users with edit access to a measure can now modify test case configuration settings, including Supplemental Data Elements (SDE), Risk Adjustment Variables (RAV), Expansion Profile (Manifest), and Test Case Data (Shift Dates), without drafting a new measure, allowing them to test updated configurations and assess their impact on test results directly within the versioned measure. • **QI-Core Measures:** MADiE now validates test cases authored with QI-Core v6.0.0, ensuring they conform to the structure of valid QI-Core v6.0.0 Test Case bundles. As part of this enhancement, users will receive errors and warnings on test case save. These messages help identify structural issues, missing data elements, and other inconsistencies. **Note:** Validation is performed asynchronously. Users can continue working in MADiE while validation runs, and errors or warnings will display once the process is complete. • A test case validation indicator has been added which displays the percentage of QI-Core v6.0.0 test cases that are valid. • A "Validation" column has been added on the test case list page displaying the validation status for QI-Core v6.0.0 test cases. • As part of ongoing improvements to MADiE, the ability to import test cases directly from Bonnie has been removed. • MADiE has been updated to use Liquid Templates 0.4.9 based on QMIG profiles. More information can be found here. • Resolved Know Issues: ○ **Date added: 11/20/2024** ○ **QDM Measures:** For Ratio and Continuous Variable measures, in test cases imported from Bonnie with observations, users may receive an error message and be prevented from editing the impacted test cases. (MADIE-2090) ○ **QI-Core Measures:** The model version number has been removed from the file names of measure and test case exports. (MADIE-2279)
9/3/25	2.2.11	QDM: 3.27.0 QI-Core: 3.27.0	• The My Measures tab has been split into Owned Measures (measures that the user owns), and Shared Measures (measures that are shared with the user). The My Libraries tab has been split into Owned Libraries (libraries that the user owns), and Shared Libraries (libraries that are shared with the user). • Resolved Issues: ○ Accessing the Stratifications tab—even without making any changes—was inadvertently generating duplicate data within

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			the measure. This led to empty stratifications being created on the back end, which in turn blocked users from exporting the measure or viewing the human-readable format. (MADIE-2272, MADIE-2274) ○ Previously, if an extra space was inadvertently added at the end of the model line of a QDM measure, the system failed to resolve valid CQL libraries. This resulted in misleading error messages. The system now trims trailing whitespace from the model line during measure creation and validation. This ensures that valid CQL libraries are correctly recognized, and no erroneous errors are displayed. (MADIE-2135)
8/20/25	2.2.10	QDM: 3.27.0 QI-Core: 3.27.0	• Users may now use a new rich text editor control in most text entry fields. This new editor will allow use of bold, italics, underline, strikethrough, numbered list, bulleted list, and tables. The formatted text will be included in human readable and resource files in exports as well. (MADIE-2104)
8/6/25	2.2.9	QDM: 3.27.0 QI-Core: 3.27.0	• MADiE users can now choose to include Risk Adjustment Variables (RAV) in their test case calculations and highlighting. (MADIE-2009) • MADiE has been updated to use CQL-ELM Translator 3.27.0. More information can be found here.
7/22/25	2.2.8	QDM: 3.26.0 QI-Core: 3.26.0	• **QI-Core measures:** Users are now able to select a measure type of "Intermediate Outcome" in MADiE. (MADIE-2249) • **QI-Core measures:** MADiE has been updated so that Measure References in the human readable output do not duplicate the "Citation" type in the description itself. (MADIE-2239) ○ Related to this update, "Justification" type references have been remapped to display elements instead of citations so they will appear correctly in the human readable, and ○ The "Documentation" type has been removed as an option for measure references in MADiE (does not affect any existing measures) • **QI-Core measures:** After the MADiE 2.2.4 release, some value sets were not being included in test case execution, causing the passing rate to be inaccurate. (MADIE-2247) • **QDM measures:** MADiE has been updated to use CQM-Execution Engine 4.4.0. Release notes can be found here. (MADIE-2242) • MADiE has been updated to use CQL-ELM Translator 3.26.0. More information can be found here.
7/15/25	2.2.7	QDM: 3.25.0 QI-Core: 3.25.0	• Users can now add or edit test cases on versioned measures they own or have shared access to. (MADIE-1737) • Users can now collapse the left navigation panel in the Test Cases tab to maximize workspace. • **QI-Core Measures:** MADiE has been updated to use FQM-Execution Engine 1.8.1. Release notes can be found here. (MADIE-2210, MADIE-2254 • MADiE has been updated to use LiquidBase Templates 0.4.8 based on QMIG profiles. More information can be found here.
6/26/25	2.2.6	QDM: 3.25.0 QI-Core: 3.25.0	• MADiE now allows users to set the pagination value to "All" on the My Measures and My Libraries tabs. Additionally, MADiE will remember the selected pagination setting for: ○ My Measures

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			○ All Measures ○ My Libraries ○ All Libraries When users navigate away and return to a measure or library list, they will return to their previously viewed list and page position. • Error messages can now be minimized with an alert counter showing the number of hidden messages. Click the counter to restore all error messages. (MADIE-2159) • Only error messages will display at the top of the screen in the error message panel. The warnings and information messages previously displayed in the panel will appear inline within the CQL. • **QI-Core Measures:** The measure reference type 'Unknown' is removed from the available types of measure references. • **Resolved Issues:** ○ Unable to add 2025 HCPCs codes through the CQL Builder. (MADIE-2219) ○ **QI-Core Measures:** To ensure successful test case execution, datetime fields in test cases with reset timezones must include millisecond-level precision. This ensures the timezone format in MADiE matches the precision expected by the execution engine. (MADIE-2227) ○ **QDM Measures:** Unable to delete some Attribute chips in QDM Test Case Builder. (MADIE-2228)
6/10/25	2.2.5	QDM: 3.25.0 QI-Core: 3.25.0	• The timestamp has been added to the Last Saved column on the test case list screen. • MADiE will now notify users when a measure export fails because there is a mismatch between the SDE definitions in the CQL and the SDE on the Population Criteria tab. (MADIE-2195, MADIE-2223) • **QI-Core Measures:** ○ The Case # for every test case is now included in the test case export package README.txt file. ○ The test case export file will include a list of invalid test cases not included in the export at the bottom of the README.txt file. (MADIE-2212) ○ MADiE now prevents a user from creating a draft off a QI-Core 4.1.1 library if a QI-Core 6.0.0 library (either a draft or version) has already been created for that library. • MADiE has been updated to use CQL-ELM Translator 3.25.0. More information can be found here. (MADIE-2215, MADIE-2216, MADIE-2217) • **Resolved Issues:** ○ **QI-Core Measures:** The human readable file for QI-Core measures are displaying the entire Measure Logic Data Requirements and Measure Logic Definitions sections twice. (MADIE-2204)
5/28/25	2.2.4	QDM: 3.24.0 QI-Core: 3.24.0	• MADiE has been updated to allow users to pull up a report from the Test Case List screen that will give users a list of value sets that are used in their measure that have overlapping codes. Users will also be able to export the report so they can access them outside of MADiE. (MADIE-1342) • **QI-Core Measures:** Measure Definitions (which was added in MADiE 2.2.0) are now included in the human readable export file. (MADIE-2203)

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			• MADiE has been updated to use LiquidBase Templates 0.4.7 based on QMIG profiles. More information can be found here.
			• MADiE has been updated to use CQL-ELM Translator 3.24.0. More information can be found here.
			• **Resolved Issues:**
			  ○ Test Cases that were passing in draft measures were failing after versioning (MADIE-2191, MADIE-2192, MADIE-2193)
			  ○ QDM measure exports were missing a line break character in the HQMF file (MADIE-2200)
			  ○ QI-Core measures were failing measure export if the Measure Name had a special character (MADIE-2208)

5/13/25	2.2.3	QDM: 3.14.0
		QI-Core: 3.22.0
			• MADiE has been updated to alert the user with an error message if the test case contains a syntax error.
			Note: Test cases can be saved but not run until the syntax error has been resolved.
			• **QDM Measures:** MADiE has been updated to use CQM-Execution Engine 4.3.2. Release notes can be found here. (MADIE-2127, MADIE-2173, MADIE-2198)
			• **Resolved Issues:**
			  ○ During export, MADIE was unable to correctly resolve the first definition if it uses a reference definition in the CQL. (MADIE-2076)
			  ○ MADiE was outputting extraneous brackets in risk adjustment variables in the human readable. (MADIE-2108)

4/29/25	2.2.2	QDM: 3.14.0
		QI-Core: 3.22.0
			• MADiE now allows the owner of a measure or library to choose to share or unshare their measure or library with other users through the user interface. Users completing the request will need to know the HARP ID of the user you wish to share/unshare your measure or library with. (MADIE-2105)
			• **QI-Core 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.
			• **QI-Core 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:
			  ○ 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
			  Note:
			  ▪ VSAC Draft Manifests include value sets in a draft status
			  ▪ VSAC Active Release Manifests do not support draft value sets (MADIE-1376)
			• **QI-Core Measures:** MADiE has been updated to use FQM-Execution Engine 1.7.0. Release notes can be found here.
			• **QDM Measures**: MADiE now allows a user to type out a value for the unit of measure in test case elements ("years" or "months" etc.) (MADIE-2014)

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			• Text entry fields throughout MADiE that have specific character limits (Measure Name, Measure CQL Library Name, etc.) now display a character counter underneath the field for better visibility of the character limit. (MADIE-1859)
			• **Resolved Issues:**
			  ○ Users now have the ability to associate a CMS ID from a QDM measure to a QI-Core 6.0.0 measure. Users will also have the option to copy over the metadata from the QDM measure to the QI-Core measure. (MADIE-2158)
			  ○ QI-Core measure export files should contain the measure Guidance text in the measure.usage field instead of measure.guidance due to measure.guidance being deprecated in QMIG STU5.
			  Note: This update will be reflected in the human readable file in an upcoming release. (MADIE-2174)
			  ○ QDM relatedTo attribute was not functioning correctly in test cases. (MADIE-2137, MADIE-2150)

4/17/25	2.2.1	QDM: 3.14.0
		QI-Core: 3.22.0
			• **QI-Core Measures:** To ensure consistencies with date/times across time zones MADiE will now force time zone offsets to be zero (UTC time zone). when a user performs any of the following:
			  ○ Saves their test case JSON
			  ○ Drafts their measure
			  ○ Copies a test case
			• When exporting a measure, users will have the ability to choose whether they want to "Export" the measure (containing all errors/warning/info messages in the ELM files) or "Export for Publish" (which will be a clean version that does not include the errors/warning/info messages in the ELM files) (MADIE-2115)
			• **Resolved Issues:**
			  ○ The following fields are now displayed in the human readable file for a QI-Core measure: (MADIE-2123)
			  ▪ Measure name
			  ▪ Effective period
			  ▪ Use Context - this is the Guidance (usage) field in MADiE
			  ▪ Copyright
			  ▪ Purpose
			  ○ Denominator and Numerator Observations have been added to the measure report populations in test case exports (MADIE-2146)
			  ○ QDM measures may not display Risk Adjustments and/or Supplemental Data Elements due to a mismatch between CQL definitions and what is selected on the Population Criteria tab for SDE/RAV. MADiE has been updated to warn users when a mismatch exists to prevent the loss of risk adjustment and/or supplemental data elements.
			  Note: Measures versioned prior to this update may still see this issue, but creating another draft of the measure will resolve the issue and apply the correct validations. (MADIE-2157)
			  ○ Users are now able to re-import QI-Core test cases that were exported from MADiE, updated, and repackaged correctly for import. (MADIE-2180)

4/9/25	2.2.0	QDM: 3.14.0 QI-Core: 3.22.0	• The following updates have been made on the library list page: ○ The View/Edit button beside each library in the list has been replaced with either a View or Edit button (depending on if the user has edit access to the library).

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			○ An "Action Center" has been moved to the top of the library list pages with icons for the following actions added: ▪ Delete ▪ Version ▪ Draft ○ A column of checkboxes in the grid allow users to select which library on which to perform an action. • Users now have the ability to export a measure directly from the human readable popup screen. • **QDM Measures:** MADiE will use the values in the value sets defined in the measure CQL for Sex, Race, and Ethnicity to populate the options available in the demographics section when building test cases, and to populate the JSON and exports. (MADIE-2142) • **QI-Core Measures:** ○ MADiE now prevents a user from creating a draft off a QI-Core 4.1.1 measure if a QI-Core 6.0.0 measure (either a draft or version) has already been created for that measure. ○ New QI-Core 6.0.0 measure CQL will include a common set of CQL code. This will include the following: ▪ Library statement ▪ Using statement ▪ Statements to include the following libraries: 1. CQMCommon 2. FHIRHelpers 3. QICoreCommon 4. SupplementalDataElements 5. CumulativeMedicationDuration ▪ Parameter statement for the measurement period ▪ Context statement ▪ SDE definitions ○ Improvement Notation is now optional in QI-Core cohort measures. ○ Users now have the ability to enter terms used in the measure and their associated definitions on the measure Details tab, Definition subtab. The measure definitions will be included in the measure bundles (XML and JSN). **Note:** Including measure definitions in the human readable export requires an update to the liquid template prior to including in a MADiE future release. ○ Users now have the ability to enter a Purpose (free text) for the measure and it is included in the measure export. ○ Users now have the ability to specify stratifications in ratio measures and it is included in the measure export. ○ Association validations have been updated for stratified QI-Core Ratio measures with two initial populations. ○ Measure exports will now use a display ID for group and population ID's instead of a UUID. The group ID format will be "Group_x" where x is the group number. The population ID format will be "PopulationName_group#_z" where z is the population number for that group. Examples of group and population IDs include "Group_1", "Group_2", and "InitialPopulation_1_1" and "InitialPopulation_2_1". **Note**: The Population Number ONLY displays if more than one of those populations exist in a given group (e.g., ratio measures with two IPs). (MADIE-2147)

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			○ Users can now choose to include Supplemental Data Elements (SDE) in their test case calculations and highlighting. ○ Find & Replace is now available when creating or editing test case JSON. Users with view access can now use the Find feature when viewing test case JSON. • MADiE has been updated to use CQL-ELM Translator 3.22.0. More information can be found here. (MADIE-2124) • **Resolved Issues:** ○ Direct Reference Codes (DRCs) are appearing twice in measure exports if it is defined in both the measure and an included library. (MADIE-2148) ○ **QI-Core Measures:** SimpleObservation function not recognized in QI-Core 6.0.0 translator due to there being 2 different versions of cqframework in MADiE. (MADIE-2153) ○ **QI-Core Measures:** When exporting test cases, the export file for users attempting to export one or more (but not all) test cases will contain all test cases for the measure, rather than just the selected test case(s).
2/19/25	2.1.4	QDM: 3.14.0 QI-Core: 3.20.0	• **QI-Core Measures:** Users are now able to specify a Scoring precision at a population criteria level. This field has also been added to measure exports. • **QI-Core Measures:** Users are now able to specify an Intended Venue of either Eligible Clinician (EC) or Eligible Hospital (EH). This field has also been added to measure exports. • Users are now able to copy test cases from a measure to another measure within the same model and model version to which they have edit access. • Users are now able to view the human readable file for any measure that does not contain errors within MADiE without having to export the measure and view it outside of MADiE. • Users were able to create multiple drafts of a measure when they click on the "Continue" button more than once while MADiE is processing the request. (MADIE-2120)
2/14/25	2.1.3 Maintenance Release	QDM: 3.14.0 QI-Core: 3.20.0	• When users make any edits to QDM measures or test cases, all test case expected values are removed. MADIE-2132
2/12/25	2.1.3	QDM: 3.14.0 QI-Core: 3.20.0	• MADiE will display a more informative error message when measure or library CQL has an include statement that does not include the version of the library they are referencing. • **QI-Core Measures**: Measure exports have been updated to use the new THO location when referencing Measure Identifiers. • The action buttons on the test case list screen have been updated to be consistent throughout the UI. **Note:** This enhancement will also allow users to delete multiple test cases with one action. (MADIE-1320) • The following updates have been made: ○ Users will see an icon beside each category in the Details tab indicating whether they have filled in data in each category. (MADIE-1738)

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			○ Users will see an icon beside each category on the Population Criteria tab and sub-tabs indicating whether they have filled in data in each category. **Note:** While each category will display a green checkmark when all required data has been entered, only required categories will display a red exclamation point when required data is missing. • **QI-Core Measures**: MADiE has been updated to use CQL-ELM Translator 3.20.0. More information can be found here. (MADIE-2114) • Measure observations are displayed in a different order if the test case was created in MADiE vs. test case imported from Bonnie (MADIE-2034) • MADiE was not using the version of the cascading style sheets (CSS) that matches up with the version of the liquid template that was being used to render the human readable, causing some human readable files to appear different in the measure export. (MADIE-2109) • When exporting QI-Core measures, MADiE now includes the "display" value for both value sets and code systems in primary and included library resource files. (MADIE-1432)
1/22/25	2.1.2	QDM: 3.14.0 QI-Core: 3.18.0	• A new tab called "Functions" has been added to the CQL Editor. On this tab, users can use a user interface to build functions to be placed into the measure CQL. • **QI-Core Measures**: MADiE now supports the ability for users to search and apply codes and/or value sets into their CQL directly while working in MADiE. • **QDM Measures**: If a measure CQL contains a retrieve without a filter, MADiE will now display an error to the user. (MADIE-1705)
1/9/25	2.1.1	QDM: 3.14.0 QI-Core: 3.18.0	• **QDM Measures**: The Gender element has been updated in test cases to have a label of "Sex" instead of "Gender". (MADIE-2064) • **QDM Measures:** Test case pass/fail, and coverage highlighting was updated to match QI-Core highlight styling. • **QI-Core Measures:** The following updates have been made for the Improvement Notation field: ○ Improvement Notation is now required. Users will not be able to export until the Improvement Notation is set ○ Users may now provide an additional Improvement Notation description using a text field. (MADIE-1708) • **QI-Core Measures:** CQL that do not contain a 'Context' statement will now display an error. • **QI-Core Measures:** The FHIRHelpers Alias name is now overwritten by MADiE if the user enters it incorrectly for both measures and libraries to align with CQL to ELM translator requirements. • **QI-Core Measures:** Test cases exported from and into MADiE will retain expected values when measure observations do not match exactly. • When viewing Saved Definitions in a measure's CQL Editor, users can now view the definitions' return types directly in the Saved Definitions grid. (MADIE-2096) • Error messages have been enhanced when Define CQL statement does not have a name and when a Code declaration is missing a code system name.

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			• MADiE validates the included library model versions match the parent library, and if they do not match the user will receive an error.
			• MADiE will now remove excess and incorrect Using statements.
			• Users now have the ability to request shared edit access for a library to be removed from other users. To request that a user no longer has shared edit access to a library, by or on behalf of the library owner or by a user the library is shared with, fill out the updated MADiE Add or Remove Measure and Library Sharing Request Form and send it to semanticbits-madie-help@icf.com.
			• Users can now switch between test cases on the test case screen by selecting from a dropdown list of all test cases.
			• Leading and trailing whitespaces from abbreviated name are trimmed prior to making export file names.
			• **Resolved Issues:**
			  ○ If a MADiE user's UMLS API key has changed, the original UMLS API key entered into MADiE cannot be updated by the user. (MADIE-1912)
			  ○ **QI-Core Measures:** MADiE users may receive a non-descript error message when trying to make updates to existing measures. (MADIE-1936)
			  Note: To have this update made in versioned measures users will have to draft and then re-version the measure prior to export.
			• **QI-Core Measures:** Measures will continue to use CQL-ELM Translator v3.14.0 instead of the updated v3.18.0 when versioning a draft measure that has not been updated since the CQL-ELM Translator was updated from to v3.18.0 with the MADiE 2.0.8 release. (MADIE-2098)

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12/19/24	2.1.0 Maintenance Release	QDM: 3.14.0 QI-Core: 3.18.0	• A recent Value Set Authority Center (VSAC) update impacted the Direct Reference Code (DRC) retrieval in MADiE. MADIE's DRC retrieval is updated to ensure no interruption in the DRC retrieval functionality.
12/18/24	2.1.0	QDM: 3.14.0 QI-Core: 3.18.0	• **QDM Measures**: The Measure References screen has been updated to replace the Select button with Edit and Delete icons. • Users now have the ability to request shared edit access for a measure they own be removed from other users. To request that a user no longer has shared edit access to your measure (and its test cases), fill out the new MADiE Add or Remove Measure and Library Sharing Request Form and send it to semanticbits-madie-help@icf.com. **NOTE:** This form replaces the MADiE Measure and Library Sharing Request Form that was previously used to submit share requests. • **QI-Core Measures:** MADiE will support Measure and Library creation in QI-Core v6.0.0. Users also can update existing measures and libraries when creating a draft by selecting to change the model used to v6.0.0.

Date	Version	CQL to ELM Translator	Features
			NOTE: MADiE does not perform validation on QI-Core v6.0.0 measure test cases at this time. • **QI-Core Measures:** Test case exports now contain stratification information for both patient and episode based measures. • **Resolved Issues:** ○ MADiE was not correctly validating patient expired exceptions in test cases. (MADIE-2084)

11/26/24	2.0.8	QDM: 3.14.0
		
		QI-Core: 3.18.0
			• The following updates were made to the CQL Editor tab:
			  ○ A new Parameters tab has been added to the CQL Editor that provides users with a user interface to build parameter statements to be placed into the measure CQL.
			  ○ The Definitions tab now supports definition comments in the CQL expression builder.
			• The UI has been updated to replace the Delete Measure button in the measure header with an action center which now allows a user to delete the measure, export the measure, and version or draft the measure based on the user's access. This allows users to complete these actions without having to navigate back out to the measure list. (MADIE-1888)
			• **QI-Core Measures:** MADiE has been updated to use CQL-ELM Translator 3.18.0. More information can be found here.
			• MADiE has been updated to use FQM-Execution Engine 1.6.0. Release notes can be found here.
			• MADiE has been updated to use LiquidBase Templates 0.4.6 based on QMIG profiles. More information can be found here.
			• **Resolved Issues:**
			  ○ Population basis is not displayed in human readable exports (MADIE-2042)
			  ○ Some users were unable to run test cases on QI-Core test cases (MADIE-2078

11/12/24	2.0.7	3.14.0	• **QDM Measures:**
			  ○ MADiE should support the "implies" operator. (MADIE-1849)
			  ○ Stratification Populations are returning a true value when it should be false in some scenarios. (MADIE-2036)
			  ○ MADiE was using the name of the population for the Measure observation, and it should display the label "Measure Observation". (MADIE-2057)
			  ○ Empty population descriptions appeared as empty white space or "null". (MADIE-2058, MADIE-2059)
			  ○ Users are unable to execute the test case and enter Expected Values for a measure group that has measure observations. (MADIE-2041)
			• **QI-Core Measures:**
			  ○ Users now have the ability to clone a test case.
			  ○ Users are unable to execute test cases on some measures due to insufficient data mapping in MADiE between two of the vendor APIs used. (MADIE-2061)
			• **Resolved Issues:**
			  ○ **QDM Measures**: Status' date timing included in the test case JSON is not being saved after translation completes.
			  ○ **QDM Measures:** Measures making comparisons on quantities may receive inaccurate test case results. MADIE-2056

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10/30/24	2.0.6	3.14.0	• **QDM Measures:** Updated the Gender drop down to reference the value set PatientSexForQualityMeasurement (OID: 2.16.840.1.113762.1.4.1021.120). rather than the value set "ONC Administrative Sex" (2.16.840.1.113762.1.4.1.)
			• The following tabs have been added to the CQL Editor:
			  ○ The "Includes" tab allows users to build library include statements to be placed into the measure CQL.
			  ○ The "Definitions" tab allows users to build definitions to be placed into the measure CQL. When viewing a definition within the new Saved Definitions table, users will be able to see the definition's return type as well. (MADIE-1426)
			• **QDM Measures:** The HQMF file is not accurately referencing the files in the package. (MADIE-2046)
			• MADiE has been updated to include a "Case #" column on the Test Case List page. (MADIE-1743)
			• **QDM Measures:** Removing a date on a test case element is not straightforward. (MADIE-1973)
			• Validation warning and error messages both display with a yellow background. (MADIE-2004)

10/16/24	2.0.5	3.14.0	• The following updates have been made on the measure list pages:
			  ○ The Select button beside each measure in the list has been replaced with either a View or Edit button (depending on if the user has edit access to the measure).
			  ○ The "Action Center" has been moved to the top of the measure list pages with icons for the following actions added:
			  1. Delete
			  2. Export
			  3. Draft
			  4. Version
			• Users now have the ability to search and filter the test cases on their measure by using the Search field or selecting from an available filter option.
			Note: Test case execution is still performed on all test cases, not just on the test cases displaying after performing a search or filtering the test cases. (MADIE-1496)
			• MADiE has been updated to use FQM-Execution Engine 1.5.0. Release notes can be found here.
			• CQL validation issues occur when a definition name is resolvable to a quoted identifier, but the definition name is not in quotations. Users may not receive CQL validation errors, however the Population Criteria section won't render, and a blank screen will display.
			Work around: Quotes should be added to all define statement names, even when it is resolvable to a quoted identifier.
			• Stratification definitions are showing up as unused even though they are used in measure. (MADIE-1977)
			• Special characters appearing encoded in the measure observation section of the human readable export. (MADIE-2030)
			• Non-descriptive error when trying to run test cases. (MADIE-2031)

10/02/24	2.0.4	3.14.0	• For QMIG STU4 support, Stratification Association is now a multi-select field. It will default to selecting all possible populations. If the stratification should not be associated to all populations, the user can

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			de-select their relevant populations. Test cases will also represent the multi-stratification association and allow users to set expected values for associations and show the actual results.
			Important: Due to the database updates needed with multi-select associations, ALL stratification details had to be cleared out. Users will need to reset any stratifications and their associations for QI-Core measures.
			• QDM **and QI-Core Measures:** When a user creates a new measure, the CQL defaults with a common set of CQL code used in most measures to give users a head start instead of beginning with completely blank CQL code.
			  ○ For QDM Measures, this will include the library statement, the using statement, a statement to include the MATGlobalCommonFunctionsQDM library, valueset statements to include the Ethnicity, ONC Administrative Sex, Payer Type, and Race value sets, the parameter statement for the measurement period, the context statement, as well as the SDE definitions.
			  ○ For QI-Core measures, this will include the library statement, the using statement, statements to include CQMCommon, FHIRHelpers, QICoreCommon, and SupplementalDataElements libraries, the parameter statement for the measurement period, the context statement, as well as the SDE definitions.
			• **QDM Measures:** With the addition of the new Value Set and Code tabs in the CQL Editor, it was requested that these tabs should default in a minimized position so that users may access them easily, and the new tabs do not use screen space when they are not needed. (MADIE-2007)
			• **QDM and QI-Core Measures:** Users can now use the new Find & Replace feature. Users may click an icon in the CQL Editor OR ensure the cursor is within the CQL Editor and press Ctrl+F or Cmd+F on their keyboard to bring up the Find & Replace window. This feature allows users to search for strings in their CQL and replace them as needed. (MADIE-1484)
			• **QDM and QI-Core Measures:** MADiE now has the ability to change the version number on a measure that was accidently versioned incorrectly. To request that a measure version be reverted, fill out the MADiE Revert Measure Version Request Form available on the Training & Resources tab of the public website under the MADiE Resources heading, and email completed form to semanticbits-madie-help@icf.com.
			• **QI-Core Measures:** As discovered during Connectathon, library resource files in QI-Core measure exports contained some encoded (and thus meaningless) content. MADiE now decodes this data in the exported files. (MADIE-1974)
			• **QI-Core Measures:** Measure Exports now include the missing measure resource files, and the naming convention has been updated so that resource files will be prepended with either "library" or "measure" depending on which entity the resource applies. (MADIE-1975)
			• **QI Core Measures:** There was an issue in how some QI-Core profiles were being mapped to their related FHIR resource types for data requirements, resulting in missing data requirements in the measure export. This known issue since 1/25/2024 has been resolved. (MADIE-1720)

Date	Version	CQL to ELM Translator	Features
			• **QDM Measures:** In some instances, in MADiE QDM measures exports, some definitions or data elements are not represented in the human readable. This known issue since 8/30/2024 has been resolved. (MADIE-2010, MADIE-2017) • **QDM and QI-Core Measures:** MADiE now displays a new column in the test case list called Last Saved which displays the date on which each test case was last saved. • **QDM Measures:** Some test cases were unable to be exported in QRDA format due to a parsing error in MADiE. (MADIE-1987) • **QDM Measures:** QRDA test case export files no longer reference Cypress in the titles. (MADIE-1945) • **QI-Core Measures:** When exporting test cases, the file and folder name of each test case now matches the patient ID in the JSON for the test case in MADiE. (MADIE-1976) • MADiE has been updated to use CQL-ELM Translator 3.14.0. More information can be found here. ○ With the translator update the code that calculates the code coverage CQL has been updated to be more accurate. It has started breaking out the CQL into more concise statements, allowing MADiE to be more accurate on what has been covered via test cases. Due to this update, your code coverage calculation may have changed. This is expected behavior and will lead to more accurate tests. If you have concerns about how your test case is being covered, please reach out to the help desk and we will assist you in understanding what has been updated. • **QI-Core Measures:** Due to a LocalID issue in the translator and execution engines, some measures showed inaccurate coverage numbers, which is resolved with the updated CQL-ELM Translator. (MADIE-1719)

8/29/24	2.0.3	3.3.2	• **QDM Measures**: Two of the Measure Type field options have been updated in both the user interface as well as in the export:
			  ○ "Intermediate Clinical Outcome Measure" has been changed to "Intermediate Outcome Measure"
			  ○ "Patient Reported Outcome Performance Measure" has been changed to "Patient Reported Outcome Measure Type"
			  (MADIE-2005)
			• **QI-Core Measures**: When re-importing test cases that were previously exported from MADiE, users may receive a warning message with information about import issues. Users now have the ability to click an icon and copy the warning message to their clipboard to be pasted into any text editor to review as they continue to work in MADiE.
			• **QDM Measures:** Test case CQL highlighting has been updated to adds a single underline along with green highlighting for passing test cases and a double underline along with red highlighting for failing test cases.
			• **QDM Measures**: Some test cases were unable to be exported in QRDA format due to a parsing error in MADiE. (MADIE-1987)
			• **QDM Measures**: Users may be unable to save changes to a test case element when attempting to delete the values entered in DateTime fields. (MADIE-1973)

8/15/24	2.0.2	3.3.2	• MADiE has been updated to allow users to shift test case dates either forwards or backwards, a user-specified number of years. This functionality will be available for a single test case or for all test cases on a measure.

Date	Version	CQL to ELM Translator	Features
			• **QI-Core Measures**: The way MADiE passes values to the liquid template has been updated to utilize the display name instead of the code name for identifier value sets, so that the values will appear in sentence-style case and be easier to read. (MADIE-1729) • Measures transferred from MAT to MADiE without a Stratification Description now displays "None" in the Stratification Description in the human readable export. (MADIE-1959) • Users now have the ability to associate a CMS ID from a QDM measure to a QI-Core measure by copying the CMS ID from the QDM measure to the QI-Core measure, indicating they are the same measure. Users will also have the option to copy over the metadata from the QDM measure to the QI-Core measure. (MADIE-1900) • Users now have the ability to request CMS IDs be deleted from their draft measure when there are no prior versions of the measure. To request that a CMS ID be deleted from your measure, fill out the MADiE CMS ID Deletion Request Form and send it to semanticbits-madie-help@icf.com. • When a user clicks the Generate CMS ID link on the Measure Details screen, a popup will display asking users to confirm they want to generate a CMS ID for the measure. • **U**sers can now request to have an unused library they own to be deleted after verifying no other measures or libraries include that library by submitting that request to the MADiE Issue Tracker. All versions (including draft) of the library will be deleted. (MADIE-1801) • **QDM Measures**: MADiE has been updated to allow users to include 128 SDEs and RAVs in a measure. (MADIE-1921) • **QI-Core Measures:** MADiE now requires that all QI-Core measures and libraries include the FHIRHelpers library. If you do not include the FHIRHelpers library in your measure or library, you will receive a CQL error. • Users now have the ability to move any popup screen around in order to see the contents of the screen behind it. (MADIE-1965) • Users now have the ability to select values for "Include in Report Type" for each SDE and RAV on their measures. • When users are adding SDEs and RAVs users some of the available options listed in the drop down can't be viewed. (MADIE-1969) • When users search for measure names and include special characters in the search criteria, the user may receive a 403 error, or the search results will not be returned. • **QDM Measures**: In some cases, large value sets were not being fully retrieved. As a result, test cases may fail unexpectedly as some codes may not be pulled in. (MADIE-1950) • **QDM Measures**: Edge test cases may fail unexpectedly due to the measurement period end date precision being used in MADiE. (MADIE-1953)
7/25/2024	2.0.1	3.3.2	• **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-

Date	Version	CQL to ELM Translator	Features

			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:
			  ○ **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	• 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 • 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 *only* the populations selected in the population criteria.

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			• **QDM Measures**: Users may experience unexpected behavior with the test case "Delete All" button.
			  ○ The "Delete All" button will remain enabled after users delete all test cases.
			  ○ The "Delete All" button will remain disabled after importing test cases.
			• **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	• 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:
			  ○ **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
			  Note:
			  1. VSAC Draft Manifests include value sets in a draft status
			  2. VSAC Active Release Manifests do not support draft value sets
			(BONNIEMAT-1376)
			• **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:

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			○ 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	• **QDM Measures:** The following updates have been made to the human readable export file: ○ The data criteria section and the definitions section has been updated to display alphabetically. (BONNIEMAT-1868 BONNIEMAT-1885) ○ The population criteria stratification section now displays "None" if there is no stratification description entered for the measure. (BONNIEMAT-1867) ○ The stratification sections now display an incremental number in each stratification label for measure containing multiple stratifications. (BONNIEMAT-1883) ○ The following labels in the population criteria section now appear plural instead of singular: (BONNIEMAT-1866) ▪ Denominator Exclusions ▪ Numerator Exclusions ▪ Denominator Exceptions ▪ 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. ○ After the MADiE 1.4.1 release, QDM measures may be transferred from the MAT to MADiE one time (Note: this may be either an initial transfer or a retransfer from the MAT to MADiE.) ○ This would be the final transfer-users would not be able to transfer the measure from the MAT to MADiE a second time after the MADiE 1.4.1 release. **IMPORTANT NOTE:** ○ If a measure is versioned in MADiE after the MADiE 1.4.1 release prior to completing that one final transfer from the MAT to MADiE, that measure may NOT be transferred from the MAT to MADiE one final time as noted above. • **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)

Date	Version	CQL to ELM Translator	Features
5/29/24	1.4.0	3.3.2	• 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: o Exports will now include the translator version used at the time the measure was versioned. o 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. o 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	• **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: o Several fields are missing from the Header o Data entered for the Initial Population and Measure Scoring fields are not being displayed in the Header o 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	• The Test Cases tab displays the total number of test cases in the measure in parentheses. • **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

Date	Version	CQL to ELM Translator	Features
4/24/24	1.3.2	3.3.2	• 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	• **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	• 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	• **QDM Measures:** The following updates have been made:
			  ○ Users now have the ability to enter:
			  ▪ Definition (Terms)
			  ▪ A Measure Set description
			  ▪ Stratification Description for each stratification in the measure.
			  ○ Users now have the ability to delete a measure reference from the measure
			• **QDM Measures:** The notification email users receive when a measure transfer fails due to the measure name or CQL library name containing an underscore has been updated to inform the user why the transfer failed. (BONNIEMAT-1752
			• **QDM Measures:** Users now have the ability to clone a test case element in the test case builder.

2/28/24	1.2.6	3.3.2	• 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.

Date	Version	CQL to ELM Translator	Features
			• **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	• MADiE has been updated to alert users if the CQL statement declaring a value set is in an incorrect format.
			  ○ 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
			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.
			• **QDM Measures:**
			  ○ 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)
			  ▪ Codes tab: Code System
			  ▪ Attributes tab:
			  • Attribute
			  • Type
			  • Value Set/Direct Reference Code
			• **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)

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2/6/24	1.2.4 Maintenance Release	3.3.2	• **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	• 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:
			  ○ 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:
			  ○ 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:
			  ○ 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:
			  ▪ Green and/or red highlighting to indicate pass/fail
			  ▪ Logic calculation expanded results (BONNIEMAT-1553)

1/17/24	1.2.3	3.3.2	• **QI-Core Measures:** MADiE has updated the ELM JSON export to retain the translator Version annotation. (BONNIEMAT-1642)

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1/11/24	1.2.2	3.3.2	• **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.
			• **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.

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Date	Version	CQL to ELM Translator	Features

12/14/23	1.2.1	3.3.2	• Removed the "Review Info" tab
			• **QI-Core Measures:** The following updates have been made:
			  ○ 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:
			  ○ 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	• **QI-Core Measures:** Direct Reference Code (DRC) mapping has been updated to reflect the following:
			  ○ 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

Date	Version	CQL to ELM Translator	Features
			• **QDM Measures:** MADiE has been updated to allow users to create and execute QDM test cases. **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. • **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	• **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	• 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:
			  ○ 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:
			  ▪ 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

Date	Version	CQL to ELM Translator	Features

			will indicate exactly what the application considers non-unique. (BONNIEMAT-1602)
			• **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:
			`"request": {`
			`"method": "POST",`
			`"url": "MeasureReport/<measure report ID>"`
			`}`
			(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	• 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:
			  ○ 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.
			  ○ 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	• **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.

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			• **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
			  o 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.
			  o The Validation Errors panel has been expanded to have the same height as the other panels for a more consistent user experience.
			  o 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	• 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.
			  o 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.
			  o 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	• **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.
			  o relative URL: "fullUrl": "Encounter/8bc8af29-4a36-4834-bdf3-03d2c89ba196"
			  o absolute URL: "fullUrl": https://madie.cms.gov/Encounter/8bc8af29-4a36-4834-bdf3-03d2c89ba196”

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			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	• **QI-Core Measures:** The following Test Case Export updates have been made:
			  ○ 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.
			  ○ 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.
			  ○ 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.
			  ▪ 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	• **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.
			  ○ **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:
			  ○ Initial Population
			  ○ Denominator

Date	Version	CQL to ELM Translator	Features
			○ 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. ○ **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: W**hen 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	• 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: ○ Initial Population ○ Denominator ○ Denominator Exclusion ○ Numerator ○ Numerator Exclusion ○ Denominator Exception This update impacts the following: ○ 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: ○ 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	• 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.

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			• **QDM Measures**: MADiE has been updated to use CQL-ELM Translator 2.10.0**.** More information can be found here. BONNIEMAT-1400 ○ Mapping issue in the CQL-ELM Translator with the element DiagnosisPresentOnAdmission.
6/14/23	1.1.6	2.7.0	• 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	• MADiE has been updated to support QDM Measure and Population Criteria creation. Users can now:
			  ○ Create a QDM measure
			  ▪ 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::
			  ○ 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	• 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	• 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	• 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.

<table>
<tr><th>Date</th><th>Version</th><th>CQL to ELM Translator</th><th>Features</th></tr>
<tr><td></td><td></td><td></td><td>

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.

</td></tr>
<tr><td>4/11/23</td><td>1.1.1</td><td>2.7.0</td><td>

Validations have been added for fields that are now required to Export a Measure. The required fields are:

Measure Details tab

Steward
Developers
Description

Population Criteria tab

Type

When 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.

</td></tr>
<tr><td>3/28/23</td><td>1.1.0</td><td>2.6.0</td><td>

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>
</td></tr>
</table>

Date	Version	CQL to ELM Translator	Features

			cpcp | CPC+ | Comprehensive Primary Care Plus (CPC+)
			
			• The Details tab has been updated to add Endorser fields to the Name, Version & ID subarea:
			  ○ 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:
			  ○ Approval Date
			  ○ Last Review Date
			These fields will be blank for draft measures; once versioned the dates will be set to the date the measure was versioned.
			  ○ 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	• 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:
			  ○ 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	• 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:

<table>
<tr><th>Date</th><th>Version</th><th>CQL to ELM Translator</th><th>Features</th></tr>
<tr><td></td><td></td><td></td><td>
<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>

Note: Condition.coverage and MedictionRequest.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

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.
</td></tr>
<tr><td>2/7/23</td><td>1.0.5</td><td>2.4.0</td><td>

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.

</td></tr>
<tr><td>1/25/23</td><td>1.0.4</td><td>2.4.0</td><td>

Updates were made throughout MADiE to update display and navigation for 508 compliance.

</td></tr>
</table>

Date	Version	CQL to ELM Translator	Features
			• 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	• 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 ○ 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.

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Date	Version	CQL to ELM Translator	Features
12/14/22	1.0.2	2.2.0	● 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	● 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. ● 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	● 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.

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			● 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. ● 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	● 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.

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			● 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	● Initial release of the Measure Authoring and Development Integrated Environment (MADiE) Minimally Viable Product (MVP)