Converting a QI-Core Measure to US Quality Core

This guide walks users through the process of converting an existing versioned QI-Core measure to a US Quality Core (USQC) measure within MADiE. In addition, the guide provides step-by-step instructions for updating associated test cases to use US Quality Core profiles while preserving existing test case data. By following this process, users can efficiently transition measures from QI-Core to US Quality Core and maintain the integrity of their existing measure and testing assets throughout the conversion.

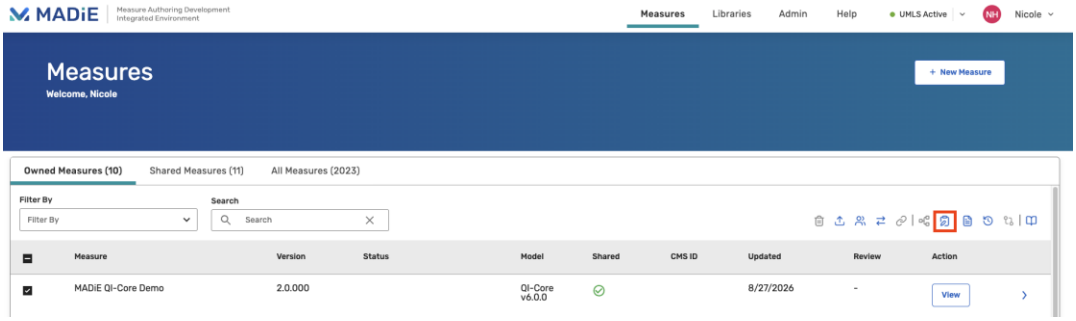
If users have a draft QI-Core measure they wish to convert to US Quality Core, first version the measure and then follow the below steps.

Note: This guide explains the MADiE workflow and is not a guide to everything measure developers will need to update for the process. For more information on that please see the CMS FHIR Quality Measure Development Implementation Guide. Please note this links to a build site (which may change as updates are made) as the CMS FHIR Quality Measure Development Implementation Guide is not finalized.

Measure Conversion

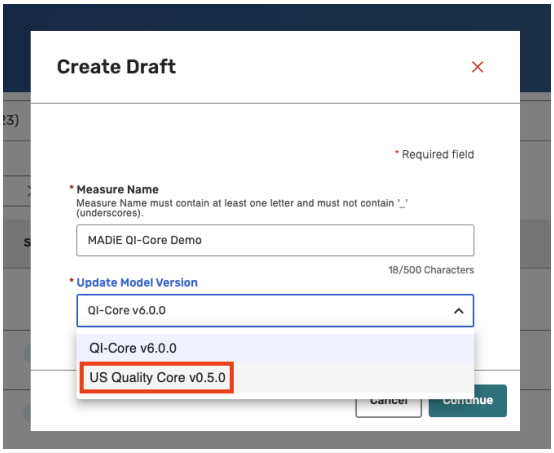
Prerequisite – a versioned QI-Core measure that is owned or shared with the user completing the following steps.

1. On the measure list page, select the versioned QI-Core measure you wish to convert to USQC
2. Click the Draft icon, the draft modal will open



3. Users can update the Measure Name if wanted

4. Select “US Quality Core v0.5.0” from the Update Model Version



5. Select “Continue”
6. Users now have a draft US Quality Core version 0.5.0 measure

What did MADiE Update?

When a measure is drafted to US Quality Core in MADiE, the system creates a new draft version of the measure using the US Quality Core model while preserving the majority of the measure's existing content and metadata. If you choose to update the measure name during the drafting process, the new draft will reflect the updated name. All existing measure metadata is carried forward from the source measure, including identifiers such as the CMS ID and other measure details.

As part of the conversion, MADiE automatically updates the CQL model references to:

```
using USQualityCore version '0.5.0'
using USCore version '6.1.0-derived'
using FHIR version '4.0.1'
```

Other than these required model updates, the measure's CQL remains unchanged. Existing logic, expressions, definitions, and any libraries referenced by the measure are carried forward exactly as they existed in the original version.

Because the underlying data model changes from QI-Core to US Quality Core, users should expect CQL validation errors immediately after drafting. These errors are anticipated and typically result from utilizing a QI-Core library or specific structures (e.g., profile or attribute names, certain first-level elements based on named extensions) in a US Quality Core measure. The measure should be reviewed and updated as necessary to align with US Quality Core requirements.

MADiE also copies all existing test cases during the drafting process. However, the copied test cases continue to use their original QI-Core profiles and are not automatically converted to US

Quality Core profiles. As a result, test cases will also require updates before they can be successfully executed against the new US Quality Core measure. The following sections of this guide provide instructions for updating test case profiles to US Quality Core while preserving existing test case data.

Note: While this document is specific to measures the same steps can be taken for stand-alone CQL libraries in MADiE. Just start with a versioned QI-Core stand-alone library. Make sure after the library is updated to US Quality Core that the library is versioned so it can be utilized in a measure.

Test Case Conversion

After conversion of the measure to US Quality Core, the test case profiles will remain QI-Core. You can see this by finding all instances of "meta" in your test case JSON.

Encounter Example:

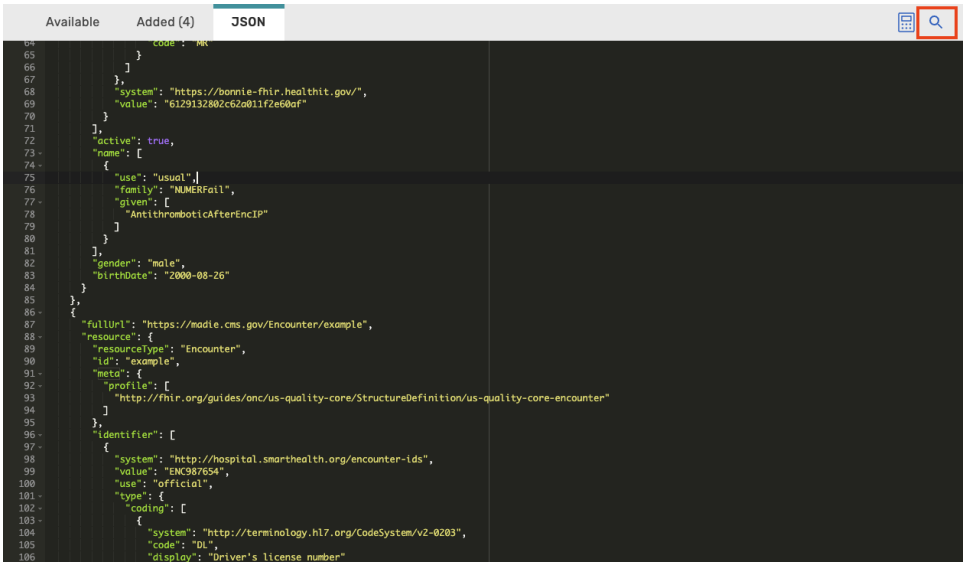
```
"meta": {
   "profile": [
      http://hl7.org/fhir/us/qicore/StructureDefinition/qicore-encounter
   ]
},
```

If a user tries to execute a US Quality Core measure with profiles that are still QI-Core, the execution will fail. The steps below outline how users can update these URLs in the JSON without having to recreate their data from scratch.

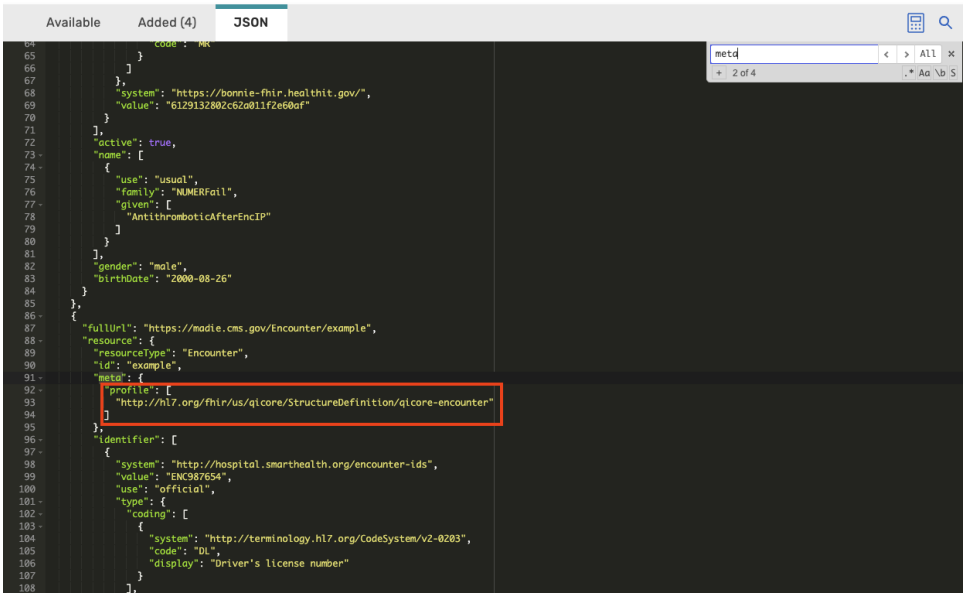
Prerequisite: A measure that is owned or shared with the user that was previously QI-Core and converted to US Quality Core in MADiE.

1. Open the measure for editing and navigate to the **Test Cases** page.
2. Select the test case you want to update and open it in edit mode.
3. Navigate to the **JSON** tab.

4. Select the **Find and Replace** (magnifying glass) icon to open the search tool.

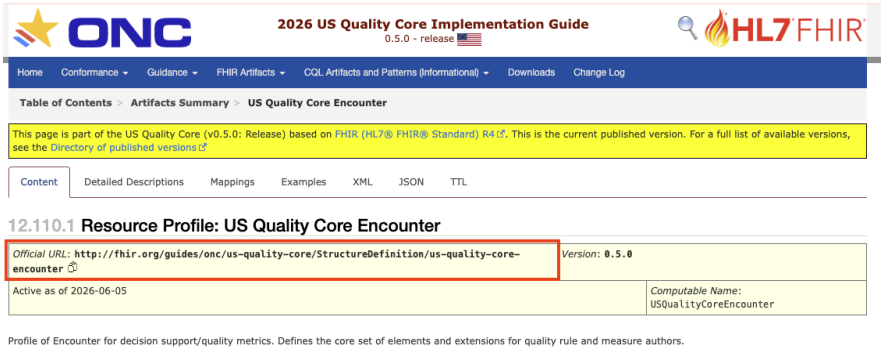


5. Enter **"meta"** in the **Find** field. MADiE will highlight each occurrence of a meta element within the test case JSON.
6. Locate the profile attribute within the meta element. The profile URL will reference a QI-Core profile and will typically end with a value such as qicore-patient, qicore-encounter, or another QI-Core resource profile.

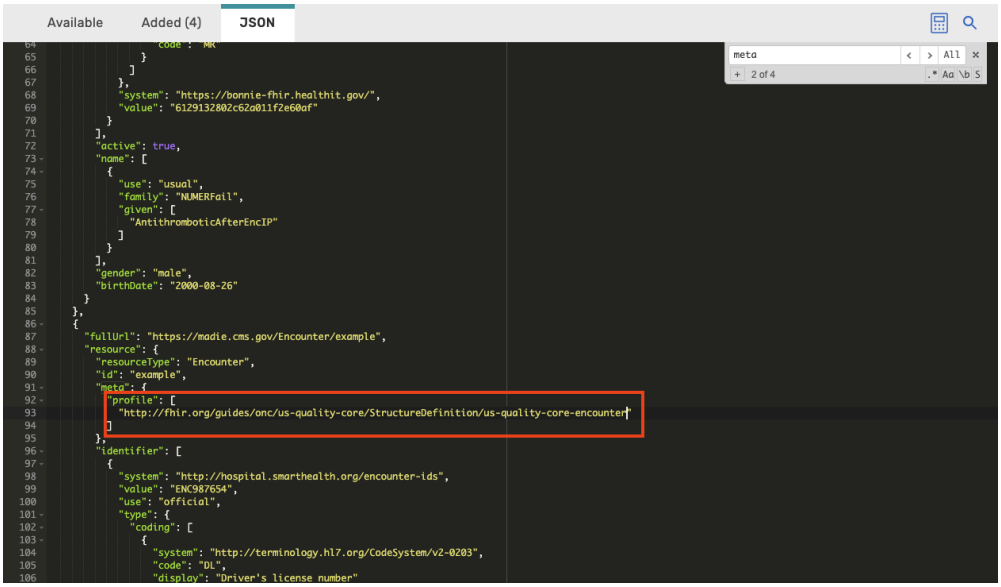


7. Open the **US Quality Core Profiles** page. That can be found here
8. Identify the US Quality Core profile that corresponds to the QI-Core profile currently referenced in the test case. For example, if the test case references a QI-Core Encounter profile, locate the corresponding **US Quality Core Encounter** profile.
9. Open the selected US Quality Core profile specification.

10. Locate the **Official URL** near the top of the profile page. Hover over the URL and select the **Copy** icon to copy the URL to your clipboard.



11. Return to the test case JSON in MADiE and highlight the existing QI-Core profile URL within the profile attribute.
12. Delete the existing URL, ensuring the surrounding quotation marks remain intact.
13. Paste the copied US Quality Core profile URL between the quotation marks.



14. Save the test case.
15. Repeat steps 6 through 14 for each meta.profile entry within the test case until all QI-Core profile references have been replaced with their corresponding US Quality Core profiles.

    Users who are comfortable working with JSON may perform a **Find All** to locate all instances of: http://hl7.org/fhir/us/qicore/StructureDefinition/qicore and then perform a **Replace All** to replace them with: http://fhir.org/guides/onc/us-quality-core/StructureDefinition/us-quality-core.

    This approach can be used to update all affected profile references in the JSON content at once.

Note: Updating the profile URLs only changes the profile references within the test case and does not modify or remove any of the existing resource data. After updating the profiles, users should review and validate the test case data to ensure they conform to the requirements of the corresponding US Quality Core profiles. Because US Quality Core and QI-Core have differences in supported elements, cardinality, and validation rules, some data that was valid in QI-Core may no longer be valid in US Quality Core. As a result, test cases that previously passed validation may require additional updates before they can be successfully saved and executed against the US Quality Core measure.