Cooking with CQL Q&As

Session 56 – Thursday, July 29, 2021

## **Tooling for CQL and IG Authors**

**Q:** When generating a narrative during the library resource refresh tooling process, is the process automated in the refresh, or is it a separate step to run the publisher?

**A:** The narrative is generated by the publisher. If you want the narrative following the refresh, you have to bundle the narrative from the published content. You can find an example of the narrative in the [Electronic Clinical Quality Measure (eCQM) Fast Healthcare Interoperability Resources® (FHIR) R4 Content Implementation Guide Library](http://build.fhir.org/ig/cqframework/ecqm-content-r4/Library-BreastCancerScreeningFHIR.html).

**Q:** When refreshing content during the IG refresh process, during the step of posting to the build site, does the bundled content have to go to the build site?

**A:** If the -f parameter is present after the publisher bundles, the publisher will attempt to post each bundled measure to the endpoint provided in the parameter. IGs typically include those generated bundles in a bundles output folder that is a peer of the IG, rather than in the IG itself, since all the measure and library resources are already included as content in the IG.

**Q:** When building the IG, if you fork the GitHub repository, and build on the fork, where does the resulting IG publish?

**A:** If you fork the repository, you will need to set up a web hook on the forked repository. If you branch, the web hook you will publish branches to the server. If you build locally, you will find the build in the output folder on your local drive.

**Q:** With regards to generation of the narrative by the measure resource, are expressions in shared libraries included, or is it only expressions in the primary library for the measure?

**A:** The generated narrative includes all expressions referenced by the measure, organized by library, such as the Global Common Functions library or the Hospice library.

**Q:** Does the Quality Measure Implementation Guide support testing to provide the expected value of the initial population in the numerator?

**A:** The Quality Measure IG defines a TestCase profile of MeasureReport that allows the expected results of a given measure evaluation to be specified. The TestCase is bundled as part of the measure content bundling. The ability to execute and run these test cases is on the Atom plugin backlog. However, the current Atom environment only supports execution of libraries.

## **General CQL**

**Q:** In the IG Refresh tooling, when tracking patients that are inpatients in the hospital and have outpatient visits, can a quality measure reference data that would be expected to be present in different systems across both those visits?

**A:** Measure specifications do not specify the location of the data or what system the data comes from, although eCQM guidance indicates that the data come from an Electronic Health Record. Current reporting processes typically report from a single data store, though that store may itself be an aggregate such as an HIE. Digital Quality Measures explicitly recognize that data for a measure may come from various sources, including EHRs, Clinical Data Repositories, Health Information Exchanges, and even Personal Health Records and other patient feeds. As an exchange standard, FHIR supports the description of data across all of these servers by using web URLs to reference resources. Note that some expressions used to trace references within FHIR CQL assume that the reference’s logical ID is on the same server., which is a known gap. Approaches are being added to CQL used in a FHIR context to address this issue.

## **Using Fast Healthcare Interoperability Resources® (FHIR®)**

**Q:** Regarding resource patterns in Fast Healthcare Interoperability Resources (FHIR®) version 4.0.1, could both the reference and the identifier fields be populated with different values?

**A:** The reference fields could be populated with different values given the underlying structures. Sometimes a reference will be provided with both the reference to the URL as well as an identifier. In this case, the reference datatype and the identifier field should have consistent populated fields, meaning that if the reference is resolved, one of the identifier elements on the resolved resource should match the identifier in the reference. The identifier element in FHIR references can also be used as an additional display element to help human readers locate the information.

**Q:** Using Fast Healthcare Interoperability Resources® (FHIR®) version 4.0.1 resources, is there information on how to resolve references within bundles?

**A:** Within a bundle of resources, there are references that can be resolved in the context of that bundle utilizing specific rules. These rules are especially important when posting a transaction requiring a URL to new resources that do not currently have logical ids on the server. The link to [Resolving References in Bundles](http://hl7.org/fhir/bundle.html#references) provides a method and rules for resolving references correctly in bundles. There is also a helpful [link](http://hl7.org/fhir/references.html#_blank) to contained resources, which provides notes about the use and interpretation of contained resources. In general, you can access, query, and trace bundles and resources with contained elements in Clinical Quality Language.