Cooking with CQL Q&As

Session 67 - Thursday, September 29, 2022

Measure Logic in CQL

**Q:** In this Quality Improvement-Core negation example, is the reference to D.code in “Venous Foot Pumps (VFP)” referencing a value set, or is it referencing a direct reference code?

|  |  |  |
| --- | --- | --- |
| define TestGeneralDeviceNotRequestedExplicit: | | |
|  |  | ["DeviceNotRequested"] D | |
|  |  | where D.code in "Venous Foot Pumps (VFP)" | |
|  |  | or D.code ~ "Venous Foot Pumps (VFP)" | |

**A:** In this example, “Venous Foot Pumps (VFP),” the DeviceNotRequested.code element is a choice of either a value set, or a coded value. Because the data being accessed can represent “what is being negated” as either a coded value or a value set reference, the logic needs to account for both possibilities. The first part of the where clause ‘D.code in “Venous Foot Pumps (VFP)” is treating D.code as a value set, and the second part of the where clause ‘D.code ~ “Venous Foot Pumps (VFP)” is treating D.code as a coded value and asking if that coded value is in the Venous Foot Pumps (VFP) value set.

Measure Logic in CQL

**Q:** When querying for instances of negation using Quality Improvement-Core, why is the negation not included in a value set? If a value set has logic that says it should be accepted or excluded, what is the condition by which a value set or a certain value is not performed?

**A:** The fact that a particular resource is documenting a negation (i.e., an event that did not take place) is usually represented with a status indicating the event was not done, or sometimes with a modifying element such as “doNotPerform”. The “negated” aspect of the statement is independent of “what” is being negated. For example, I can say that I “did not order a Venous Foot Pump”. So, the value sets that we use to describe the “What” typically don’t have negation in them (and are almost always the same value sets we use to look for the positive statement that the event was done).

That something was not done, and what was not done, are also independent from the “reason” that it wasn’t done. For example, if the provider did not order a Venous Foot Pump because they determined there was no indication for the device for this patient, that could be represented using the “Not indicated” code as the reason for the negation.

|  |  |
| --- | --- |
| { | |
|  | "system": "http://snomed.info/sct", | |
|  | "code": "410534003", | |
|  | "display": "Not indicated (qualifier value)" | |
|  | } | |

Measure Logic in CQL

**Q:** Using this Quality Improvement-Core negation example, what is the difference in the meaning between the two General Not Done defining statements?

|  |  |  |
| --- | --- | --- |
| define TestGeneralDeviceNotRequested: | | |
|  |  | ["DeviceNotRequested": "Venous Foot Pumps (VFP)"] | | |
|  |  |  | | |
| define TestGeneralDeviceNotRequestedActual: | | | |
|  |  | ["DeviceNotRequested": code in "Venous Foot Pumps (VFP)"] | | |
|  |  | union ["DeviceNotRequested": code ~ "Venous Foot Pumps (VFP)"] | | |

**A:** The first expression is a retrieve of any negated DeviceRequest, whether that request is indicating a specific device was not ordered (i.e., represented with a code) or indicating that none of a class of devices was ordered (i.e., represented with a value set). This first example is the best practice for retrieving general negation statements. The second example is just an illustration of how the first example is expanded for implementation to support the different approaches to representing negation.

Measure Logic in CQL

**Q:** Regarding negation in Quality Improvement-Core and Specific Not Done, is a direct reference code allowed in negation?

**A:** Supporting direct-reference codes in negation criteria is on the roadmap, but not currently supported. To use a single code, add it to a value set and use the value set negation criteria approach.

Value Sets and CQL

**Q:** What is the importance of being able to query for a negation when using Quality Improvement-Core?

**A:** There is importance in understanding what was not done among a value set. Instead of searching for all the codes individually in a value set, this process allows a search indicating none of the items in a value set were performed. For example, if there are 10 members in a value set, there is less clinical burden to state none of the 10 were performed rather than having to do so 10 times, once for each member.

General CQL

**Q:** In the current Quality Data Model (QDM) measures for the Annual Update, direct reference codes are not used in the negation expression. Can you use direct reference codes for the negation expression in the QDM measure?

**A:** No. Direct reference codes will not work in QDM for negation purposes.

General CQL

**Q:** If measuring a negation using Quality Improvement-Core, is it a requirement to use one code in the value set as a direct reference code?

**A:** Yes. Use a single code in a direct reference code to measure negation.

General CQL

**Q:** Will there be updates to the use of negation in future updates of Fast Healthcare Interoperability Resources®?

**A:** There is a plan for support of negation logic for the next Annual Update.

General CQL

**Q:** At the September 2022 Connectathon, when testing negation in Quality Improvement-Core (QI-Core), did measure developers install a new plug-in resulting in a change in logic and test cases?

**A:** The change was not related to the logic, but to the profile tag. The profile tag on the resource states this device request conforms to the QI-Core DeviceNotRequested profile. In Clinical Quality Language (CQL,) when logic asks for DeviceNotRequested, the profile tag is used. If you remove this meta profile tag, then the logic will not work correctly. You must use the profile tag. Additionally, the release of Visual Studio Code CQL plug-in v0.4.0 was around the time of Connectathon, which provided other features.

General CQL

**Q:** Where is the status information on negation in Quality Improvement Core (QI-Core) to understand the details and nuances of the functionality?

**A:** You can find this information inthe QI-Core Implementation Guide. We currently have this information in the Negation Reason Codes discussion and each of the profiles in QI-Core have the examples and usage. We also have a patterns page for high-level patterns. This guidance is being applied as part of the latest ballot for QICore and will be available in the next published release.