Cooking with CQL Qs&As

Session 46 - Thursday, July 30, 2020

# Using Quality Data Model

**Q:** When using the Quality Data Model (QDM) v.5.5 attributes for organizations, does this example make sense?

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This example shows how to check that the organization associated with a blood pressure is the same as the encounter:

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|  |  |
| --- | --- |
| define "Qualifying Blood Pressures": | |
|  | ["Physical Exam, Performed": "Blood Pressure"] BP |
|  | with ["Encounter, Performed": "Office Visit"] Encounter |
|  | such that BP.relevantPeriod during Encounter.relevantPeriod |
|  | and EINOf(Encounter.participant.identifier) = EINOf(BP.performer.identifier) |
|  |  |
|  | define "EIN Identifier System": 'urn:oid:2.16.840.1.113883.4.4' |
|  |  |
|  | define function EINOf(identifier Identifier): |
|  | identifier I where I.namingSystem = "EIN Identifier System" return I |

**A:** Yes. For simplicity, we explicitly decided QDM would only represent one participant, performer, or organization within any given data element. This representation provides a little bit of flexibility in terms of how a submitting system populates that data element. There needs to be guidance associated with the use of the entity type to indicate that participants are expected to be the organization and the organization would have to use their own naming system identifier to run the string of code.

# Date and Time Calculations

**Q:** When interpreting time phrases in Clinical Quality Language (CQL), what is the subtraction of one hour when there is a leap second?

**A:** The definition of a calendar hour is the same time in the next hour so that effectively allows you to treat hours like calendar durations in the same way that we do for leap days. We say that the month is the same date in the next month if that date exists, otherwise it is the previous day. Because leap seconds are so foreign to human experience and our goal is natural language expression for humans, we do not call out leap seconds specifically, but leap seconds are the reason that Unified Code for Units of Measure (UCUM) units and calendar durations units are only equal up to the second. A UCUM unit is not comparable to the calendar duration unit for anything above a second.

**Q:** When interpreting time phrases in Clinical Quality Language (CQL), for example, an encounter started at midnight on 1/1/2020 and the diagnosis also started at midnight on 1/1/2020. In this case, did the diagnosis start during the encounter?

**A:** Using the example provided, this expression returns true because it defines during inclusively. The diagnosis is during that interval because during hits the boundaries of this expression. Whether the diagnosis started at midnight or 10:30 am, both of those would count if we are just looking at starts during because it is an inclusive comparison.

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