Cooking with CQL Q&As

Session 51 - Thursday, February 25, 2021

# Date and Time Calculations

**Q:** In calculating the overall expected duration (days) of a medication request in Fast Healthcare Interoperability Resources® (FHIR)®, would the logic expression used for variable frequency and periodUnit still apply if the prescription is an absolute order, such as one dosage a day or one dosage every 12 hours? For a prescription that is an absolute order, such as that described, does the logic of using a variable frequency and periodUnit still apply?

(quantity / (dosage \* frequency)) \* (1 + numberOfRepeatsAllowed)

dosage: Coalesce(end of doseAndRate.doseRange, doseAndRate.doseQuantity)

frequency: Coalesce(frequencyMax, frequency)

period: Quantity(period, periodUnit)

**A:**  The variable logic expression would still apply for defined medication orders (e.g., defined quantity, specified duration). The frequencyMax would be empty and period max would not be defined. The calculation would only return the frequency and period.

**Q:** When calculating the cumulative period or start date for a single medication request in Fast Healthcare Interoperability Resources® (FHIR)®, which would be best to use within the code, the start of validityPeriod or authoredOn?

**A:** When calculating the MedicationRequestPeriod, the validityPeriod and authoredOn anchors provide a similar, and often same, result. As background, if a physician writes a prescription for a patient on ‘x’ date (authoredOn), they do not know exactly when the patient will fill the prescription. Note that validityPeriod definition is the “Time period supply is authorized for

,“ in other words, the time period after which the prescription can no longer be filled. Commonly, the pharmacist determines the validity of the prescription based on the ‘x’ date the prescription was written by the physician, commonly it is one year but it may be less for specific medications. After the end of the validityPeriod the pharmacist will no longer fill the prescription deeming it invalid and will ask the patient to provide a new prescription from their physician. If the start of validityPeriod is known, it will be used as the earliest dispensable date. If the validityPeriod is not known, authoredOn is the best anchor to use.

Interval[earliestDispensable, earliestDispensable + expectedSupplyDuration]

earliestDispensable: Coalesce(start of validityPeriod, authoredOn)