CQL Notes:

**Lines 7-12**: Declaring sets of values where the values are codes that are used to reference some sort of code system (reminds me of ISBN).

**Line 14**: Setting a parameter indicating the interval of time in which we want to measure INR values. In this case, between 1/1/2013 – 1/1/2014.

**Line 16**: Switching context to focus on a patient.

**Lines 18-23**: Here the value sets from lines 7-12 are being used to gather information about a patient. For example:

define OfficeVisitEncounters: [Encounter: "Office Visit"] is gathering all the office visits a patient has attended and places it in the OfficeVisitEncounters container. Like SELECT \* FROM *table* WHERE Condition == “Flutter Diagnosis”.

**Lines 25-26**: Declaring a demographic constraint.

**Lines 28**: Self-explanatory – getting all the inpatient encounters

**Lines 29-30**: Determining whether a Flutter or Valvular Heart Disease diagnosis is in place before the measurement period (1/1/2013 – 1/1/2014).

**Line 32**: Setting the lookback period for cumulative medication duration calculation.

**Line 34-35**: Getting records where the time Warfarin was active overlaps the lookback period from line 32.

**Lines 37-40**: Collapsing all the records where the time Warfarin was active intersects (getting more precise intervals) with the lookback period (200 days).

**Line 42**: Calculating the number of days in which Warfarin was active during the lookback period.

**Lines 44-46**: Gets all the patient’s INR lab results except for those with a stay in the hospital for more than 23 hours during the measurement period.

**Lines 48-57**: Constructs a tuple with the date of the result, the INR value of the result, and how far off the target INR value (2.5) the INR value of the result is.

**Lines 59-64**: Gets the INR value for each day that there was a result, picking the closest to the target INR if there are more than one, and sorting them by date.

**Line 66**: Declaring the therapeutic range interval (2.0-3.0)

**Lines 68-93**: Getting information about consecutive INR reports and storing in a tuple.

**Lines 110-111**: Calculating TTR

The rest is self-documented basically:

Making sure the number of days in the interval is less than or equal to 53 and that at least 2 of these intervals are present. Then the initial population is defined with easy-to-understand constraints. Lines 124-125 don’t seem to accomplish anything. Then finally the context is switched to focus on the population and the average TTR is calculated.