Cooking with CQL Q&As – Session 47

Thursday, October 1, 2020

Measure Logic in CQL

Q: We are attempting to determine the most appropriate composite measure scoring type to use for a performance measure we are considering. We are considering two options, 1) Linear combination, and 2) Any-or-none. However, given the fact that the measures are component measures, then we cannot go with option 1 because it only applies to individual measure components. Is that correct?

```
* V2_Risk-standardized Major Bleeding Rate
    Following Elective Primary Total Hip Arthroplasty (THA)
    and/or Total Knee Arthroplasty (TKA) Electronic Clinical Quality Measure (eCQM)
* V2_Risk-standardized Venous Thromboembolism (VTE) Rate
    Following Elective Primary Total Hip Arthroplasty (THA)
    and/or Total Knee Arthroplasty (TKA) Electronic Clinical Quality Measure (eCQM)


Option 1. linear combination:
   Performance Rate = (Numerator 1 + Numerator 2) / (Denominator – Denominator Exclusions)

Option 2. Any-Or-None
   Performance Rate = (Numerator 1 + Numerator 2 - number with both) / (Denominator –
   Denominator Exclusions)
```

A: This question was a primary focus of this Cooking with CQL Session, and is answered in full in the [composite measure walkthrough](https://github.com/cqframework/CQL-Formatting-and-Usage-Wiki/blob/master/Source/Cooking%20With%20CQL/47/146_CompositeMeasures.cql). The summary answer is that in a proportion measure, each case can contribute at most once to the numerator, so you can combine component measures with an “OR” or an “AND”, but not with a “+”, because that would require counting the case in the denominator more than once. See the linear combination approaches in the examples for this session for how to express these.

Q: Regarding the denominator exclusions in the patient-based linear combination formula, are the cases in the component individual numerators mutually exclusive?

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```

A: No, not necessarily. The exclusions that are specific for each event are excluding specific events that could be considered a false positive. For example, exclusions that are specific to venous thromboembolism (VTE) that would otherwise show up as VTE, but are not necessarily VTE. This is the same for bleeding rate. Exclusions for VTE rate include a diagnosis of VTE 30 days prior to admission so the exclusion for VTE may still be valid in looking for bleeding, but the exclusion for VTE would not be valid in looking for VTE.

Q: When calculating the combined numerators for the linear combination options, does that mean one patient could be counted in two or more events depending on exclusions? Is that what this composite measure is looking for?

```
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```

A: Yes, that is why we have to switch to the units of analysis of VTE and bleeding events rather than patients because if we just say it is the patient measure population then we only get one count per patient even though what we are looking for is a VTE or bleeding rate so we have to

expand the basis to let us count that. Patients can be counted multiple times based on the events.