



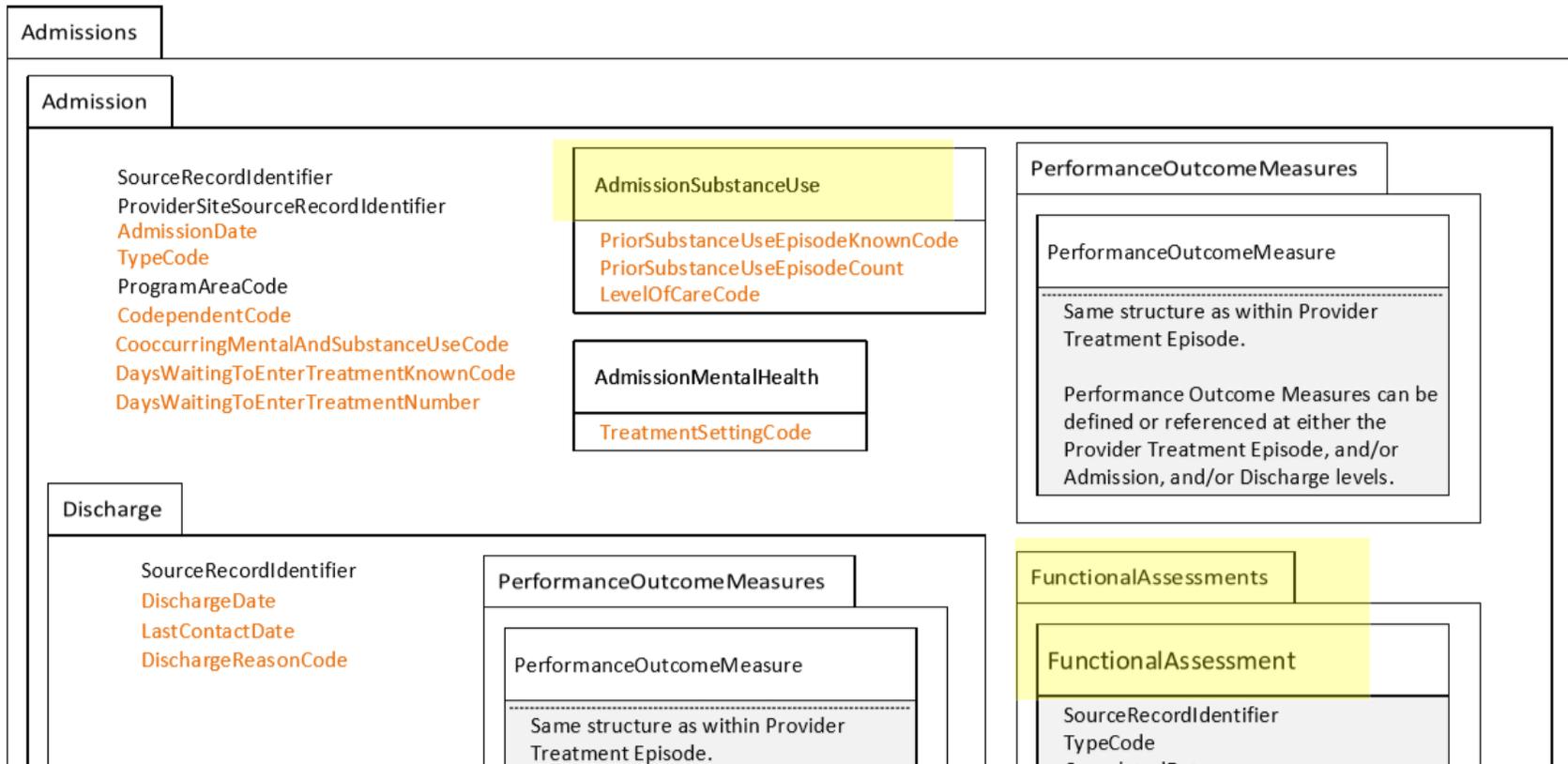
Mississippi Department of Mental Health (DMH)

**Technical Assistance Note:
Sub-Entities And Associations**

Question: How can I tell if a sub-entity is "one to many" or "one to one"?

The best way to find this information is to look at the Diagrams document, located at <http://www.dmh.ms.gov/wp-content/uploads/2020/03/MS-DMH-DW-Diagrams.pdf>

For reference, this is the "Admissions" section of the document.



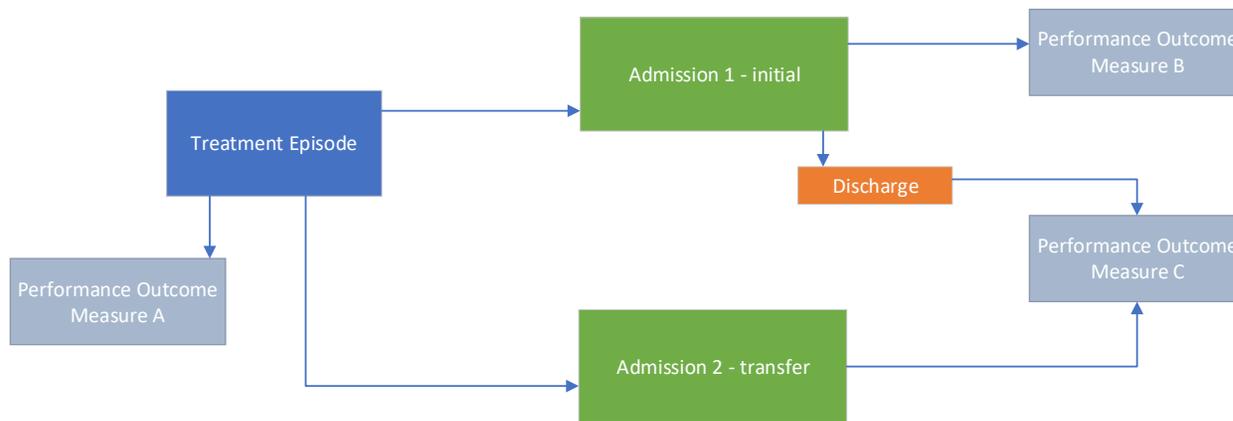
This diagram is based on UML(Unified Modeling Language); the part that's important to understand in this context is about how "a sub entity" is depicted, vs. "a container of sub entities". When an object contains a single sub-entity, it's depicted as a box – see "AdmissionSubstanceUse", above. AdmissionSubstanceUse is a sub-entity of Admission, and there is only one AdmissionSubstanceUse record inside an Admission.

FunctionalAssessments, however, is a "single inside a plural" container: Note that Functional Assessments (plural) contains a Functional Assessment (singular) object.

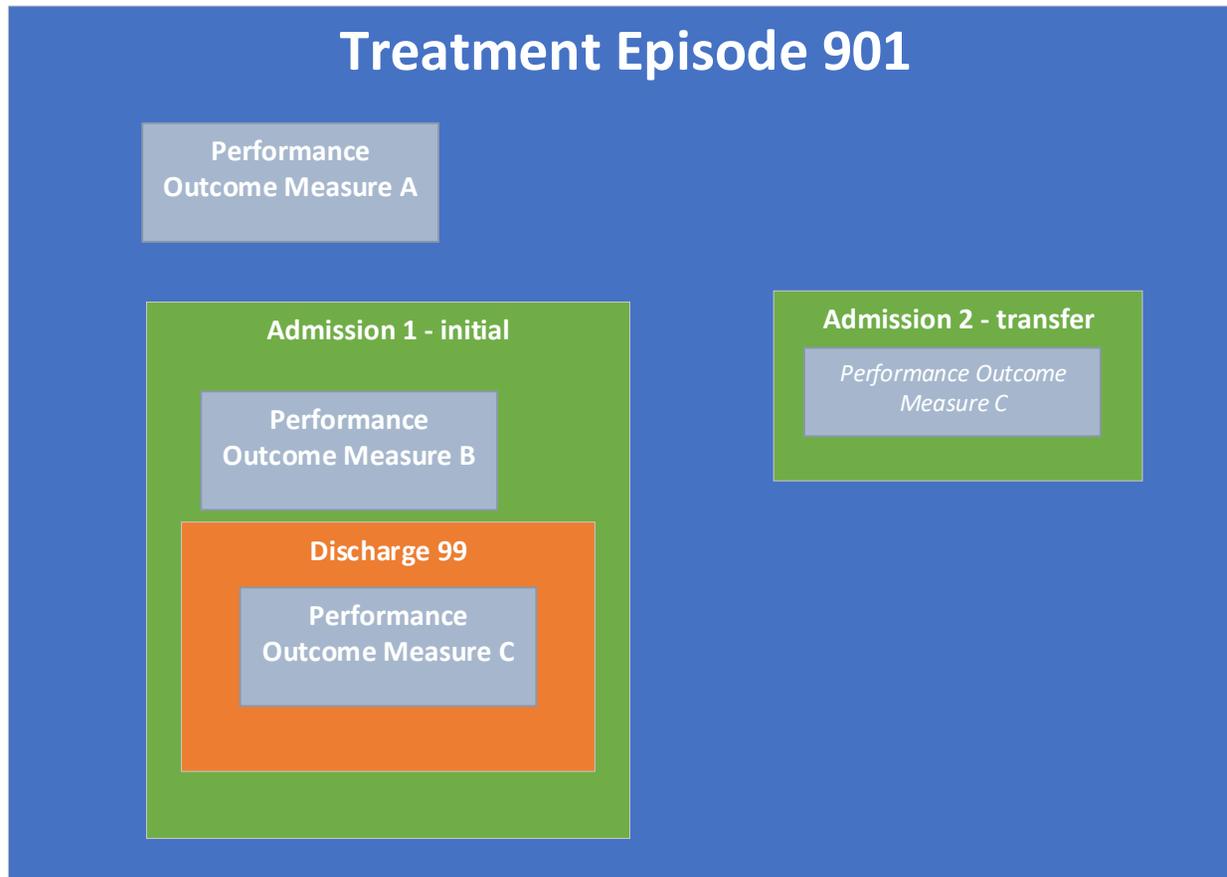
Question: How do I associate an Admission with an Episode? Where do I put the parent SRI? What is an Episode, and what's the difference between an Episode and an Admission?

An Episode is the entire interaction between a client and a provider, which may contain multiple admissions. Multiple admissions within an episode may represent multiple Levels of Care (SUD) or Treatment Settings (MH). The way that a "child record" is referenced within a parent in the XML structure is a little different from a traditional database parent-child relationship where there would be a "parent source record identifier" column. In the example below, a client has entered care. Before Admission, Treatment Episode A was recorded and associated with the Episode. Admission 1 began and ended (you can tell it's ended because there's a Discharge record). A Performance Outcome Measure (B) was recorded at the beginning of Admission 1. Another Performance Outcome Measure (C) was recorded at the time of discharge. In a real-life scenario, Admission 1 could be inpatient treatment, and Admission 2 could be outpatient within the same provider. Because the patient was discharged from inpatient and immediately admitted to outpatient, we re-use the same Performance Outcome Measure (Performance Outcome Measure C) for both the discharge of Admission 1 and to start Admission 2.

Here are how those entities are associated:



Here's how that example would look using containers, which is closer to how the XML might actually look. Note that in Admission 2, Performance Outcome Measure C is in italics – that's indicating that the Performance Outcome Measure is not actually included there, it's just a reference to Performance Outcome Measure C that was recorded in the Discharge. We also have added an identifier for this Episode (901) and one for the Discharge (99). Generally, you can think of this diagram as "boxes within boxes" – if something is inside something else, that indicates that it's a sub-entity of that object.



Finally, we can put the whole thing in pseudo-XML to see how it would look in a file. The important point below is that objects are “inherent children” in XML. In the XML below, Admission A is inside Treatment Episode 901. That makes it a sub-entity of Treatment Episode 901. We do not have to explicitly say “This is part of Treatment Episode 901” anywhere on the Admission.

Notes:

- The tags in this file are not necessarily correct and it is not complete, this is just for illustration.
- I am using the identifiers above as Source Record Identifiers (e.g. Admission 1 has a SRI of 1)
- Each object has at least one example data row (e.g. First contact date for Treatment Episode); in reality there are many data rows for each object
- Comments in **[bracketed red bold]**

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<TreatmentEpisodeDataSet>
```

```
  <ProviderTreatmentEpisodes> [An example of a plural container – this is the container of all episodes]
```

```
    <ProviderTreatmentEpisode> [This is an individual episode]
```

```
      <SourceRecordIdentifier>901</SourceRecordIdentifier>
```

```
      <FirstContactDate>2/25/2020</FirstContactDate>
```

```
      <PerformanceOutcomeMeasures>
```

```
        <PerformanceOutcomeMeasure>
```

```
          <SourceRecordIdentifier>A</SourceRecordIdentifier>
```

```
          <PerformanceOutcomeMeasureDate>2/25/2020</PerformanceOutcomeMeasureDate>
```

```
        </PerformanceOutcomeMeasure>
```

```
      </PerformanceOutcomeMeasures>
```

```
    <Admissions>
```

```
      [All of the Admissions are contained in this section]
```

```
      <Admission> [This is the beginning of Admission 1]
```

```
        <SourceRecordIdentifier>1</SourceRecordIdentifier>
```

```
        <AdmissionDate>3/1/2020</AdmissionDate>
```

```
        <PerformanceOutcomeMeasures>
```

```
          <PerformanceOutcomeMeasure>
```

```
            <SourceRecordIdentifier>B</SourceRecordIdentifier>
```

```
            <PerformanceOutcomeMeasureDate>3/1/2020</PerformanceOutcomeMeasureDate>
```

```
          </PerformanceOutcomeMeasure>
```

```
        </PerformanceOutcomeMeasures>
```

```
        <Discharge>
```

```
          <SourceRecordIdentifier>99</SourceRecordIdentifier>
```

```
          <DischargeDate>3/4/2020</DischargeDate>
```

```
          <PerformanceOutcomeMeasures>
```

```
            <PerformanceOutcomeMeasure>
```

```
              <SourceRecordIdentifier>C</SourceRecordIdentifier>
```

```
              <PerformanceOutcomeMeasureDate>3/4/2020</PerformanceOutcomeMeasur
```

```
eDate>
```

```
            </PerformanceOutcomeMeasure>
```

```
          </PerformanceOutcomeMeasures>
```

```
        </Discharge>
```

```
      </Admission> [This is the end of Admission 1]
```

```
      <Admission>
```

```
        <SourceRecordIdentifier>2</SourceRecordIdentifier>
```

```
        <AdmissionDate>3/4/2020</AdmissionDate>
```

```
        <PerformanceOutcomeMeasures>
            <PerformanceOutcomeMeasure>
                <SourceRecordIdentifier>C</SourceRecordIdentifier>[***]
            </PerformanceOutcomeMeasure>
        </PerformanceOutcomeMeasures>
    </Admission>
</Admissions>
</ProviderTreatmentEpisode>
</ProviderTreatmentEpisodes>
</TreatmentEpisodeDataSet>
```

[*- This line is important. Note that we are not providing any Performance Outcome Measure data here, we are ONLY providing the Source Record Identifier. Because we defined that Performance Outcome Measure already above, we can now reference it with the SRI and not provide any more data than that]**

Finally, on the subject of multiple Performance Outcome Measures within an Admission: If you go back to the diagrams, you'll see that the Admission object contains a "Performance Outcome Measures" section, with a "Performance Outcome Measure" object within it. This means that an Admission may contain multiple POMs. So in the above example, anywhere you see a "Performance Outcome Measures" section, multiple POMs could exist within. For example, an Admission with several POMs might look like this:

```
<Admission>
  <SourceRecordIdentifier>1</SourceRecordIdentifier>
  <AdmissionDate>3/1/2020</AdmissionDate>
  <PerformanceOutcomeMeasures>
    <PerformanceOutcomeMeasure>
      <SourceRecordIdentifier>B</SourceRecordIdentifier>
      <PerformanceOutcomeMeasureDate>3/1/2020</PerformanceOutcomeMeasureDate>
    </PerformanceOutcomeMeasure>
    <PerformanceOutcomeMeasure>
      <SourceRecordIdentifier>C</SourceRecordIdentifier>
      <PerformanceOutcomeMeasureDate>3/2/2020</PerformanceOutcomeMeasureDate>
    </PerformanceOutcomeMeasure>
    <PerformanceOutcomeMeasure>
      <SourceRecordIdentifier>D</SourceRecordIdentifier>
      <PerformanceOutcomeMeasureDate>3/3/2020</PerformanceOutcomeMeasureDate>
    </PerformanceOutcomeMeasure>
  </PerformanceOutcomeMeasures>
</Admission>
```