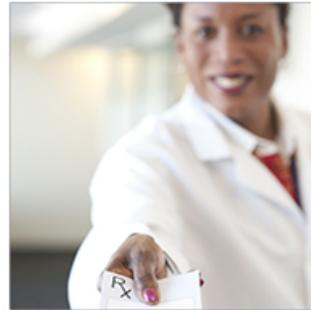


Cumulative Medication Duration

Representing CMD in the Quality Data Model (QDM)

June 12, 2014



Recent History

- **CMD has not been easy to resolve**
 - In User Group Meetings: Feb 19, Mar 5, Mar 19, Apr 16, May 21
 - In focus group meetings and email threads

- **The latest solution discussed in focus group was *promising***
 - But it cannot be expressed in HQMF R2.1
 - Requires changes to other specs not feasible in our timeline

- **QDM needs an interim solution to carry us through 2014**

Interim Solution

Sum > 180 day(s) of: "Medication, Dispensed: Warfarin (cumulative medication duration)" during "Measurement Period"

Sum > 180 day(s) of: "Medication, Order: Warfarin (cumulative medication duration)" during "Measurement Period"

■ Approach:

- Cumulative Medication Duration remains an attribute (as in previous versions)
 - On Medication Order, Dispensed, Active, and Administered
 - QDM Specification will define how the attribute should be calculated
- Sum defined to consider overlaps when operating on CMD

■ Benefits

- Fixes QDM syntax error without reducing the original functionality
- Expressible *today* in QDM and HQMF R2

Interim Solution's Limitations

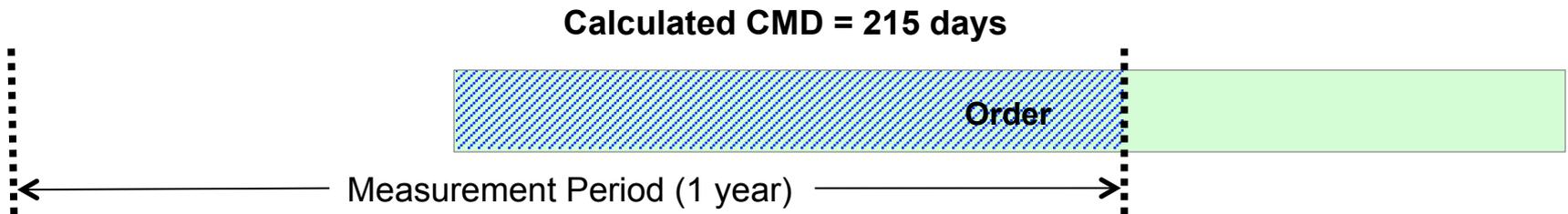
Sum > 180 day(s) of: "Medication, Dispensed: Warfarin (cumulative medication duration)" during "Measurement Period"

- **No “prorating” medication events**
 - Every event captured by your timing logic contributes its *full* CMD calculation to the aggregate CMD result
 - No notion of a “calculation period”
- **EHRs may not have records of dispensed medications**
 - This affects measures calculating CMD on Medication, Dispensed
- **Patient-Reported Medications are not included in the CMD**
 - This is a more general problem with *any* CMD solution
- **Restricted to a single QDM Element w/ a single value set**
 - i.e., cannot calculate CMD on a union of different medications

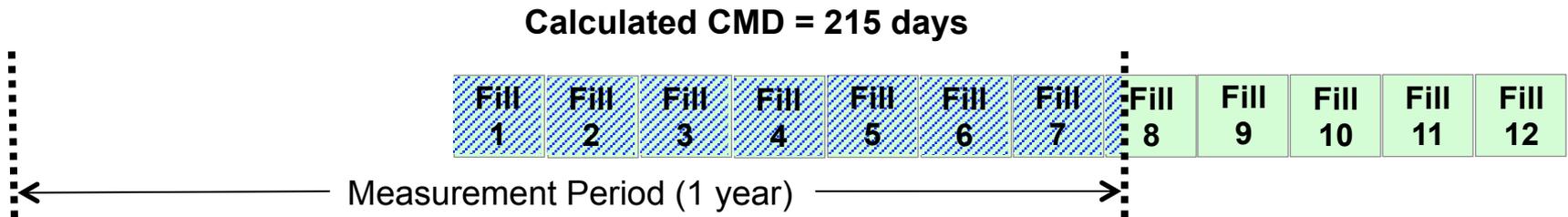
Backup

Prorating Limitation: What We Can't Do with the Interim Solution (using annual prescriptions w/ monthly fills)

Sum > 180 day(s) of: "Medication, Order: Warfarin (cumulative medication duration)" overlaps "Measurement Period" calculated during "Measurement Period"



Sum > 180 day(s) of: "Medication, Dispensed: Warfarin (cumulative medication duration)" overlaps "Measurement Period" calculated during "Measurement Period"

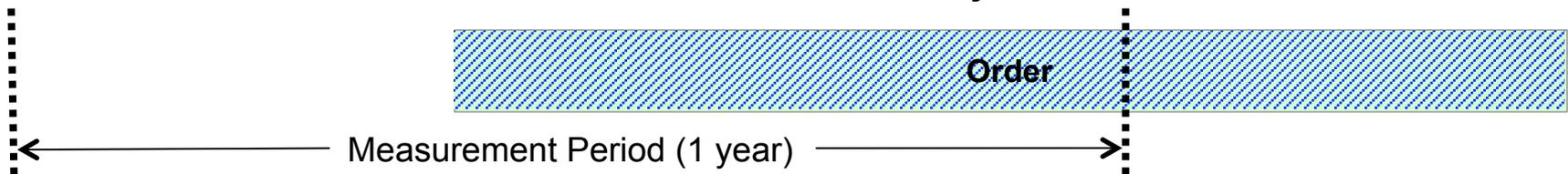


Prorating Limitation: Option 1

(using annual prescriptions w/ monthly fills)

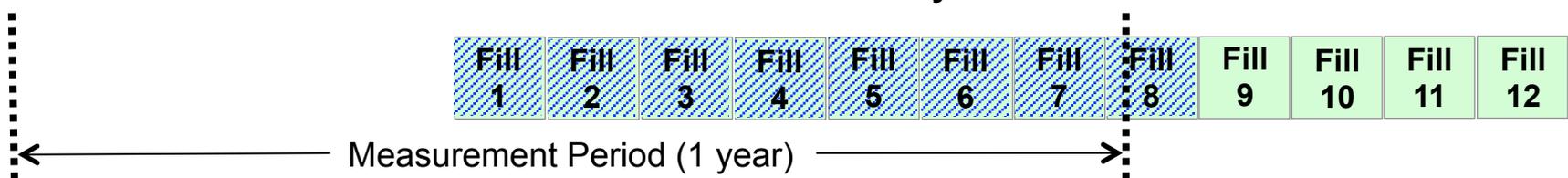
Sum > 180 day(s) of: "Medication, Order: Warfarin (cumulative medication duration)" overlaps "Measurement Period"

Calculated CMD = 360 days



Sum > 180 day(s) of: "Medication, Dispensed: Warfarin (cumulative medication duration)" overlaps "Measurement Period"

Calculated CMD = 240 days

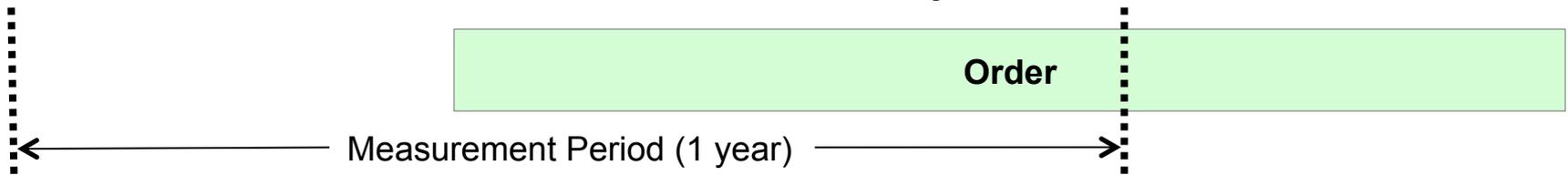


Prorating Limitation: Option 2

(using annual prescriptions w/ monthly fills)

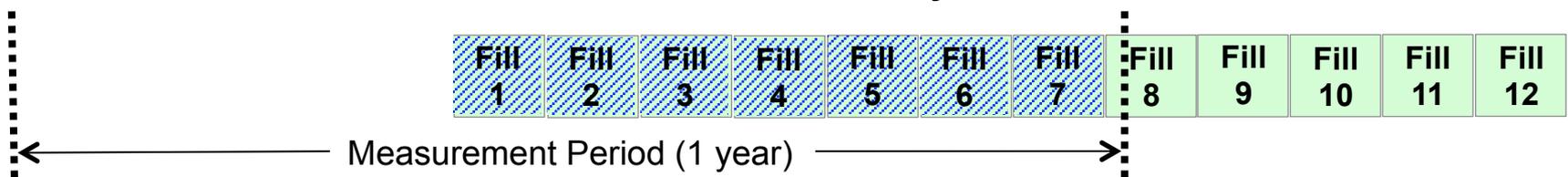
Sum > 180 day(s) of: "Medication, Order: Warfarin (cumulative medication duration)" during "Measurement Period"

Calculated CMD = 0 days



Sum > 180 day(s) of: "Medication, Dispensed: Warfarin (cumulative medication duration)" during "Measurement Period"

Calculated CMD = 210 days

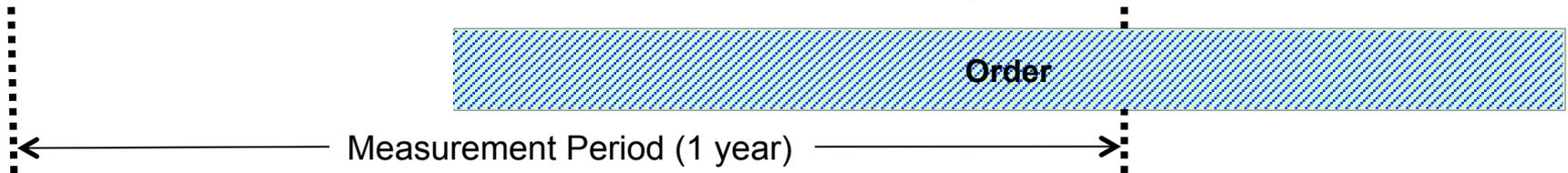


Prorating Limitation: Option 3

(using annual prescriptions w/ monthly fills)

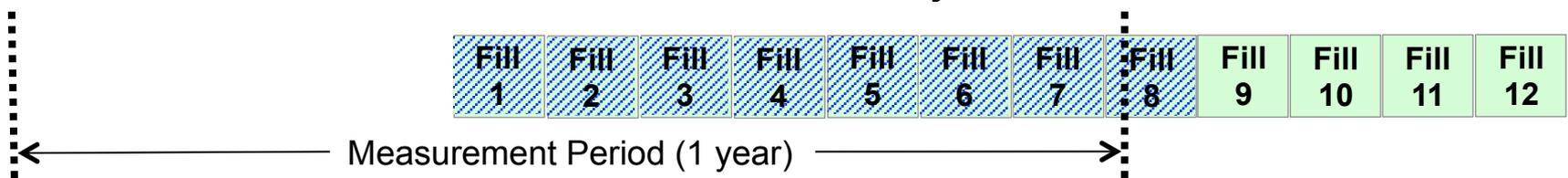
Sum > 180 day(s) of: "Medication, Order: Warfarin (cumulative medication duration)" starts during "Measurement Period"

Calculated CMD = 360 days



Sum > 180 day(s) of: "Medication, Dispensed: Warfarin (cumulative medication duration)" starts during "Measurement Period"

Calculated CMD = 240 days

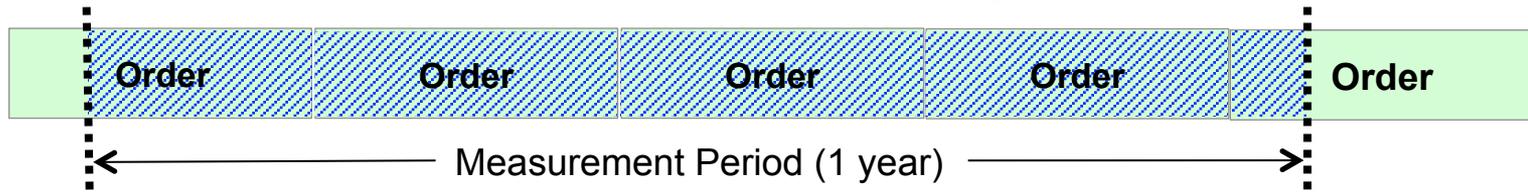


* There is no distinction from Option 1 in this use case, but the distinction exists in other use cases

Prorating Limitation: What We Can't Do with the Interim Solution (using quarterly prescriptions w/ monthly fills)

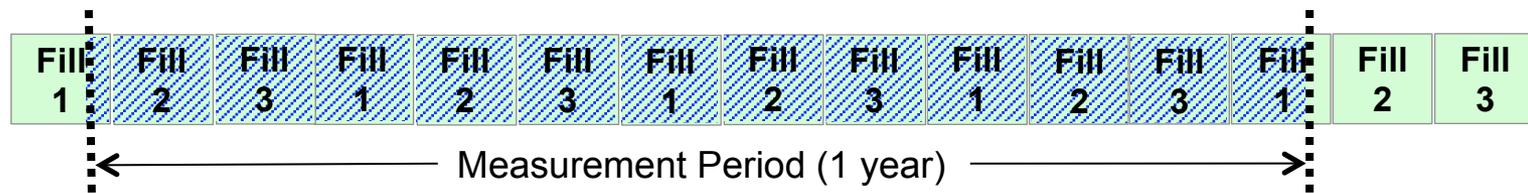
Sum > 180 day(s) of: "Medication, Order: Warfarin (cumulative medication duration)" overlaps "Measurement Period" calculated during "Measurement Period"

Calculated CMD = 365 days



Sum > 180 day(s) of: "Medication, Dispensed: Warfarin (cumulative medication duration)" overlaps "Measurement Period" calculated during "Measurement Period"

Calculated CMD = 365 days

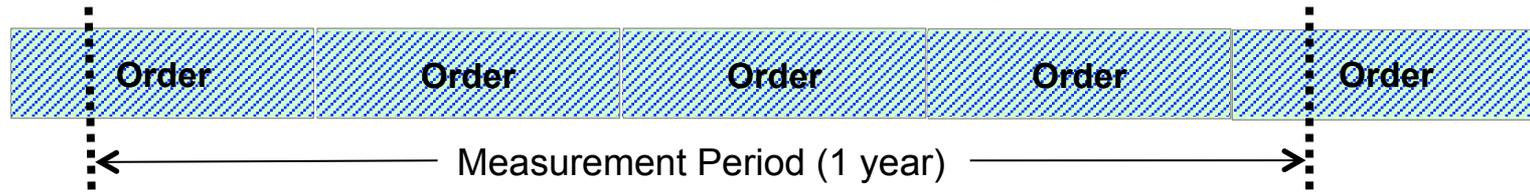


Prorating Limitation: Option 1

(using quarterly prescriptions w/ monthly fills)

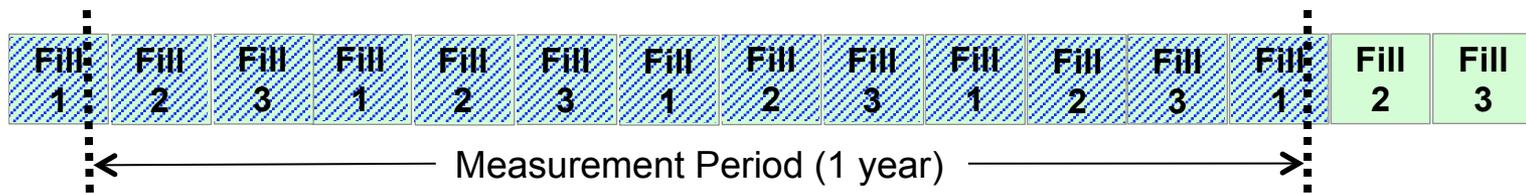
Sum > 180 day(s) of: "Medication, Order: Warfarin (cumulative medication duration)" overlaps "Measurement Period"

Calculated CMD = 450 days



Sum > 180 day(s) of: "Medication, Dispensed: Warfarin (cumulative medication duration)" overlaps "Measurement Period"

Calculated CMD = 390 days



Prorating Limitation: Option 2

(using quarterly prescriptions w/ monthly fills)

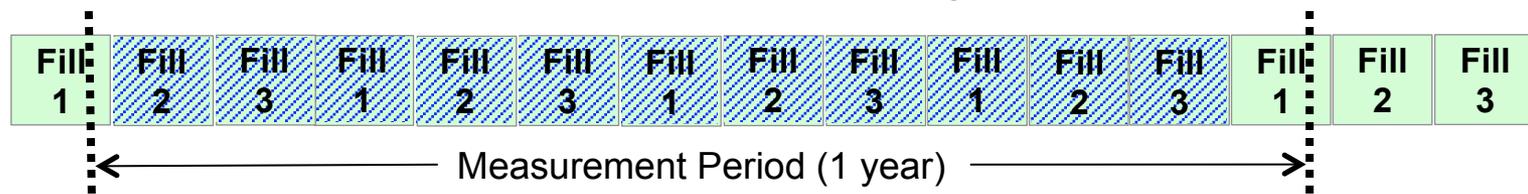
Sum > 180 day(s) of: "Medication, Order: Warfarin (cumulative medication duration)" during "Measurement Period"

Calculated CMD = 270 days



Sum > 180 day(s) of: "Medication, Dispensed: Warfarin (cumulative medication duration)" during "Measurement Period"

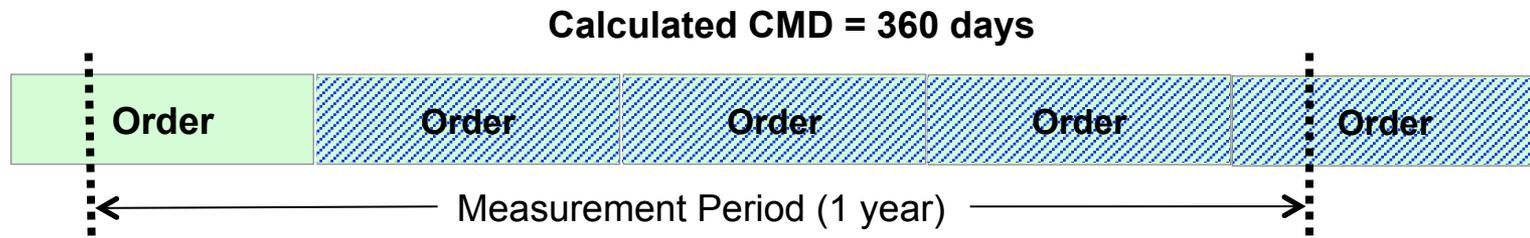
Calculated CMD = 330 days



Prorating Limitation: Option 3

(using quarterly prescriptions w/ monthly fills)

Sum > 180 day(s) of: "Medication, Order: Warfarin (cumulative medication duration)" starts during "Measurement Period"



Sum > 180 day(s) of: "Medication, Dispensed: Warfarin (cumulative medication duration)" starts during "Measurement Period"

