

2020-02 Clinical Reasoning

Submitting WG/Project/Implementer Group

Clinical Decision Support/Clinical Quality Information/Da Vinci Project

Justification and Objectives

This track has three main objectives:

- 1) Continue testing quality reporting use cases
- 2) Test the new `order-select` hook using CDC Opioid Prescribing (in coordination with the CDS Hooks track)
- 3) Test FHIR Clinical Guidelines example content (in coordination with the Care Planning and Public Health tracks)

This track will use both the [STU3](#) and [R4](#) versions of FHIR.

Clinical input requested (if any)

Clinical review of the proposed workflows for the data exchange scenarios, as well as clinical input on the question of whether there is potential value in the data exchange scenarios for a measure with such a short window of opportunity for intervention like VTE-1.

Related tracks

Bulk Data

Care Planning

CDS Hooks

Public Health

Track Lead

Bryn Rhodes, bryn@databaseconsultinggroup.com

Expected participants

Apelon

ESAC

EBSCO (via EBM-on-FHIR)

Epic (via CDS Hooks)

Cerner (via CDS Hooks)

Dynamic Content Group

Track Orientation

A webinar will be hosted on [January 16th at 1:00PM ET](#) to share further participation information about this track:

<https://global.gotomeeting.com/join/485150525>

You can also dial in using your phone.

United States: +1 (872) 240-3212

Access Code: 485-150-525

One Touch Call: +1(872)240-3212,,485150525#

Orientation Meeting Recording: Will be posted once the meeting has occurred

Orientation Slides: [Clinical Reasoning Connectathon 23 Track Orientation.pptx](#)

Getting Started with Clinical Quality Language: [Getting Started with CQL.pptx](#)

Please fill out the Pre-connectathon survey: <https://www.surveymonkey.com/r/X2KZVGV>

Also, please sign up for the Connectathon Manager and indicate the Clinical Reasoning track as your primary track: <http://conman.clinfhir.com/connectathon.html?event=sydney2020>

We will use the Clinical Reasoning connectathon stream in Zulip for communication before, during, and after the connectathon: <https://chat.fhir.org/#narrow/stream/179207-connectathon-mgmt/topic/Clinical.20Reasoning.20Track>

Track Report Out: [Clinical Reasoning Track Report Out.pptx](#)

System Roles

Quality Reporting Scenarios

Producer - System of record for clinical information such as an EHR

Consumer - A system that aggregates data from multiple sites related to reporting quality measures such as a payer, hie, reporting vendor or public health registry

Reporter - A system that sends quality reporting data and results

Receiver - A system that receives quality reporting data and results

Systems capable of playing these roles should implement the exchange and reporting scenarios as described in the Data Exchange for Quality Measures implementation guide.

Decision Support Scenarios

CDS Service - A system that provides decision support guidance via the CDS Hooks API

CDS Client - A system that consumes decision support via the CDS Hooks API

Systems capable of playing these roles should implement the CDS Hooks API. Systems may also support ingestion of computable decision support content as described in the Clinical Guidelines implementation guide.

The **CQF Ruler**, a reference implementation of FHIR Clinical Reasoning based on the HAPI FHIR Server is available to either play the Consumer, Receiver, and CDS Service roles, or to help guide and test implementations in preparation for the track.

A test instance of the CQF Ruler is available here: <http://cds-sandbox.alphora.com/cqf-ruler/baseDstu3>

Content and testing resources for the scenarios are available here: <https://github.com/dbcg/connectathon>

A test population for the screening measure calculations is available here: <https://drive.google.com/open?id=1AEzOaYam2ngaEdFASsjWBNJ1PynNmyhn>

Scenarios

Data Exchange Scenarios:

For these scenarios, the Producer and Consumer exchange the data-of-interest for a quality measure, either by push or pull

This is the EHR Reference Implementation server endpoint for the Medication Reconciliation Post Discharge use case to test the DEQM \$submit-data operation - <https://api-v8-stu3.hspconsortium.org/DaVinciMRPPProvider/open>

This is the Payer Reference Implementation server endpoint for this use case - <https://api-v8-stu3.hspconsortium.org/DaVinciMRPPayer/open>

Individual Exchange Scenarios

Push Scenario (\$submit-data)

Action: An EHR playing the role of the Producer uses the \$submit-data operation to report the data-of-interest for an MRP measure

Precondition: The EHR has appropriate data to produce the data-of-interest for the measure, either based on the test data, or by walking through a simulated workflow that produces the data required

Success Criteria: The Consumer receives the data and successfully processes the data

Bonus Point: Run the operation multiple times throughout a simulated measurement period to feed incremental data of interest for the measure to the Consumer

Pull Scenario (\$collect-data)

Action: A Consumer uses the \$collect-data operation to gather the data-of-interest for an MRP

Precondition: The EHR has appropriate data to produce the data-of-interest for the measure, either based on the test data, or by walking through a simulated workflow that produces the data required

Success Criteria: The Producer responds to the \$collect-data and the Consumer is able to successfully process the response

Bonus Point: Run the operation multiple times throughout a simulated measure period to collect incremental data of interest for the measure

Group Exchange Scenarios

For the Group Exchange scenarios, we focus on the need for payers to track status of members for a screening measure, a Colorectal Cancer Screening measure in this case. The scenarios are based on the case where a payer sends a request to a provider for a the screening information for a group of covered patients.

These scenarios will attempt to use the Bulk Data API as specified in the FHIR specification. In particular:

- \$collect-data will use bulk data to communicate the response
- \$submit-data will use an implementation of bulk data import to communicate the payload of the request

Push Scenario (\$submit-data)

In the push scenario, the provider - through some interface in their system - gathers the screening information for the set of patients and submits it:

Action: An EHR playing the role of the Producer uses a batch of \$submit-data interactions to report the data-of-interest for the COL measure for the set of patients

Precondition: The EHR has appropriate data to produce the data-of-interest for the measure, either based on the test data, or by walking through a simulated workflow that produces the data required

Success Criteria: The Consumer receives the data and successfully processes the data

Bonus Point: The provider system uses the Bulk Data format send the information

Pull Scenario (\$collect-data)

In the pull scenario, the payer uses the \$collect-data operation to request through the provider's API

Action: A Consumer uses a batch of \$collect-data interactions to gather the data-of-interest for a COL measure for a set of patients

Precondition: The EHR has appropriate data to produce the data-of-interest for the measure, either based on the test data, or by walking through a simulated workflow that produces the data required

Success Criteria: The Producer responds to the \$collect-data batch and the Consumer is able to successfully process the responses

Bonus Point: The payer system uses the Bulk Data format to request the information

Reporting Scenarios:

For these scenarios, a Reporter and Receiver exchange the data and results of a quality measure.

Individual Report Scenario

Action: An Reporter reports the data and results for an Individual MRP, COL, or VTE-1 measure to a Receiver

Precondition: The Reporter has appropriate data to produce the individual MeasureReport for the measure

Success Criteria: The Receiver receives a completed MeasureReport and verifies that it has the correct data and the calculated result is correct for the individual

Bonus Point: Use a subscription to notify the Receiver when the report is ready for retrieval

Summary Report Scenario

Action: A Reporter reports the results for a Summary MRP, COL, or VTE-1 measure to a Receiver

Precondition: The Reporter has appropriate data to produce the summary MeasureReport for the measure

Success Criteria: The Receiver receives a completed MeasureReport and verifies that it has the expected result for the population

Bonus Point: Use a subscription to notify the Receiver when the report is ready for retrieval

Calculation Scenarios:

For these scenarios, a Receiver requests the calculation of a quality measure by a Reporting system.

Individual Report Scenario

Action: A Receiver uses \$evaluate-measure to request the data and results for an Individual MRP, COL, or VTE-1 measure from a Reporter

Precondition: The Reporter has appropriate data to produce the individual MeasureReport for the measure

Success Criteria: The Receiver receives a completed MeasureReport and verifies that it has the correct data and the calculated result is correct for the individual

Bonus Point: Use asynchronous result calculation (MeasureReport status = in-progress)

Summary Report Scenario

Action: A Receiver uses \$evaluate-measure to request the results for a Summary MRP, COL, or VTE-1 measure from a Reporter

Precondition: The Reporter has appropriate data to produce the summary MeasureReport for the measure

Success Criteria: The Receiver receives a completed MeasureReport and verifies that it has the expected result for the population

Bonus Point: Use asynchronous result calculation (MeasureReport status = in-progress)

Opioid Decision Support

The Centers for Disease Control and Prevention (CDC) have issued guidelines relating to the prescription of opioids:

[<https://www.cdc.gov/drugoverdose/prescribing/guideline.html> Opioid Prescription Guideline]

The Opioid Prescribing Support Implementation Guide represents several recommendations of this guideline as computable artifacts using the FHIR Clinical Reasoning Module:

[<http://build.fhir.org/ig/cqframework/opioid-cds/> Opioid Prescribing Support Implementation Guide]

This scenario will focus on testing usage with the new order-select hook for recommendations #5, #10, and #11

Action: The chart is opened for a patient that is currently prescribed opioids and has not had the recommended urine drug screening, so the recommendation for a urine drug screening is displayed.

Success Criteria: An EHR user is provided appropriate guidance when viewing a patient that is currently prescribed opioids

Bonus Point: The logic accesses an extension as a first-class element of the model

For the purposes of this scenario, long-term opioid therapy is defined as use of opioids on most days for > 3 months, and the patient does not have metastatic cancer. To determine these, the CDS Service will need to access:

- Current Medication List
- Problem List
- Encounter Diagnoses within 12 months

For communicating medications, the service will expect information in a MedicationRequest or MedicationStatement, with at least the following supplied:

- Medication as an RxNorm code
- Dosage
- Frequency

The implementation guide provides computable artifacts describing the calculations for MME based on the CDC Guidance. The CDS Service can use these representations to provide the functionality described for this scenario.

TestScript(s)

The supporting TestScripts and corresponding fixtures have been committed to the FHIR documents Github repository at:

- TBD

Security and Privacy Considerations

The scenarios and reference implementations here run using open (i.e. unsecured) connections. Systems SHALL NOT use PHI in any form, or data derived directly from PHI.