

# FHIR Connectathon 30

## Risk Adjustment Track Kickoff

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4/28/2022



# Agenda

- Connectathon and Risk Adjustment Track Overview
- Testing
  - Continue Testing STU 1
  - Draft STU 2 Testing
- Next Steps



# CONNECTATHON AND RISK ADJUSTMENT TRACK OVERVIEW



# Connectathon Schedule

- The May 2022 Connectathon will be held May 2<sup>nd</sup> - May 4<sup>th</sup> in US Eastern Time
- Event schedule:
  - May 2, 2022 (Mon) 4:00 PM ET Connectathon Kickoff
  - May 2, 2022 (Mon) 5:00 PM ET Da Vinci Connectathon Kickoff
  - May 3, 2022 (Tues) 9:00 AM – 5:00 PM ET Connectathon
  - May 4, 2022 (Wed) 9:00 AM – 5:00 PM ET Connectathon
  - May 4, 2022 (Wed) 5:00 PM ET Connectathon Wrap-Up
- Detailed agenda is available through Whova:

— [https://whova.com/portal/webapp/cmsoc\\_202210/sign\\_in/Agenda](https://whova.com/portal/webapp/cmsoc_202210/sign_in/Agenda)

Whova Whova Guides Organizing your own event?

**HL7 FHIR Connectathon**  
Apr 21 - May 4, 2022 | Displaying in your local time: 11:08 PM [Switch to event time](#)

Home Agenda Sessions

Filter by tracks

All  - Build/Test/Validate

Da Vinci Risk Adjustment



# Connectathon Links

- HL7 requires all newcomers attend a three-hour Newcomer Orientation: <https://vimeo.com/542197402/8fb80fea04>
- Risk Adjustment Track Page: <https://confluence.hl7.org/display/FHIR/2022-05+Da+Vinci+Risk+Adjustment>
- Zulip Chat: <https://chat.fhir.org/#narrow/stream/311469-Da-Vinci.20Risk.20Adjustment/topic/Connectathon>
- Pre-connectathon survey: <https://www.surveymonkey.com/r/JK799RM>
- Event contact: Sandy Vance at 614.273.5916 or [HL7Connectathon@hl7.org](mailto:HL7Connectathon@hl7.org)



# Implementation Guide

- Da Vinci Risk Adjustment Implementation Guide:
  - STU 1 ready for publication:
    - <https://build.fhir.org/ig/HL7/davinci-ra/>
  - Draft STU 2 branch:
    - <http://build.fhir.org/ig/HL7/davinci-ra/branches/Draft-STU2-Branch/index.html>



# Risk Adjustment Track Sessions

May 3<sup>rd</sup> (Tuesday ) 10am ET – 5pm ET

- IG review and demo of testing process and test scripts
- Build and test
- Day 1 wrap up and discussions

May 4<sup>th</sup> (Wednesday)

- Build and test
- Bulk data and patient list
  - Join Clinical Reasoning Track and Da Vinci DEQM and Gaps in Care/Da Vinci Member Attribution at 4pm ET



# Continue Testing STU1





# Goals

- Re-run test scripts from the Connectathon 29 against the post ballot updated STU 1 IG
- Run the new test scripts to test the new test cases identified in the Connectathon 29



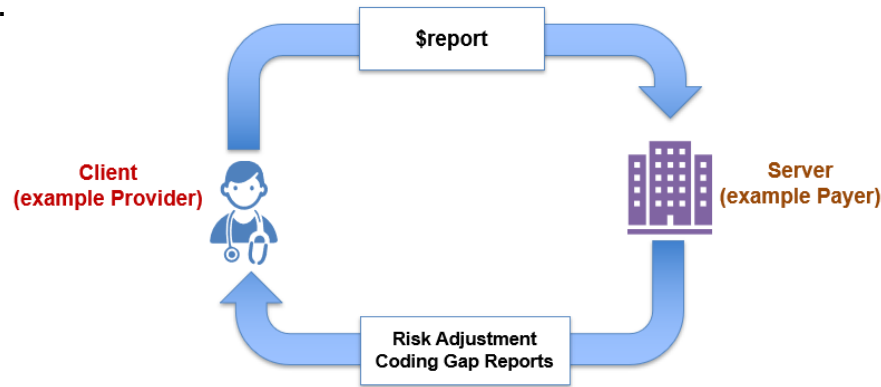
# Testing Process Overview

- Test cases are defined according to a test plan
  - <https://confluence.hl7.org/display/DVP/%24report+Test+Plan+Template>
- Each test case has a corresponding Touchstone test script
  - Additional advanced Touchstone test script available for ad-hoc testing
- Each test case is entered in the [Connectathon Manager](#) (ConMan) as a test scenario
- Run test in [Touchstone](#)
- Record testing results in the Connectathon Manager
- Log issues against the Implementation Guide in [HL7 Jira](#)



# System Roles

- Client – A system requesting risk adjustment coding gaps.
  - For example, a provider is the Client when they request coding gaps for their patients from a payer system.



- Server – A system receiving the request for retrieving the risk adjustment coding gaps.
  - For example, a payer system receives a request for getting coding gaps for all patients of a provider, the payer system acts as the Server.



# Newly Added Test Cases

- Test case for \$report on single patient, the test data on the Server have additional resources (e.g., Condition) that are not referenced by any of the MeasureReports and make sure these resources are not returned for the patient
- Test case for counting the bundle entries that are not MeasureReport. The intent is make sure not to return resources in the bundle that are not referenced by evaluatedResource
- Test case to make sure there are no duplicate entries in the Bundle.
- Test case to make sure the same resource referenced by the evaluatedResource are not duplicated (e.g., evaluatedResource references Condition12 more than once, the Bundle should only contain the Condition12 resource once)



# Test Scenarios - parameters

- For each of the test cases for the \$report operation parameters
  - **Action:** A Client calls the \$report operation to the Server with the input parameters specified in the test case. Depending on the input parameters received, the Server either returns risk adjustment coding gap report (MeasureReport) or OperationOutcome to the Client.
  - **Precondition:** Server has a number of pre-generated risk adjustment coding gaps reports that support the \$report operation input parameters and the test cases specified
  - **Success Criteria:** The Client receives expected results as specified in the test case



# Test Scenarios - result

- For each of the test cases for the result of the [\\$report](#) operation
  - **Action:** A Client calls the \$report operation to the Server according to the test case, the Server returns appropriate results
  - **Precondition:** Server has a number of pre-generated risk adjustment coding gaps reports that support the \$report operation input parameters and the test cases specified
  - **Success Criteria:** The Client receives expected results as specified in the test case. Results are examined in detail, to ensure, for example, MeasureReport is constructed correctly with correct data elements and evaluatedResources.



# Participating Systems

- Risk Adjustment Reference Implementation
  - Server End Point (**New**):  
<https://cloud.alphora.com/sandbox/r4/ra/fhir/>



# Connectathon Manager

- Record testing results in the Connectathon Manager (ConMan):  
<http://conman.clinfhir.com/connectathon.html?event=con30>
- Participating servers and clients:
  - If you plan to bring a server, be sure to register your server in ConMan and visit the ConMan tutorial for more information:  
<https://confluence.hl7.org/download/attachments/104568828/2021-04-08%2017.06%20Meet%20Now.mp4?version=1&modificationDate=1618252745761&api=v2>





# Connectathon Manager Login

- <http://conman.clinfir.com/connectathon.html?event=con30>

Connectathon Manager: HL7 May 2022

Home Page Track details & testing 52 Int...

The purpose of this application is to help support Conn...

Summary of this event General information

### Login for HL7 May 2022 Cancel

User Name

[Register new person](#)

*Enter your name to log in to the event (no password needed). If you have not yet been registered (either by the event organizer or yourself) then click the 'Register' link to register.*



# Connectathon Manager

Home Page

Track details & testing **52**

Implementation Guides **56**

People **182**

Clients **29**

Servers **99**

Test Results **2**

Participation report

Event Activity

Enter string to filter Track

Da Vinci DEQM and Gaps in Care

Da Vinci Member Attribution Track

Da Vinci Notifications

Da Vinci Patient Cost Transparency

Da Vinci Payer Data Exchange (STU2)

Da Vinci Payer Data Exchange Track for CMS Patient Access API

Da Vinci Risk Adjustment

Eligibility Criteria (EBM)

Evidence Based Medicine (COVID-19 Knowledge Accelerator)

FAST - Hybrid/Intermediary Exchange

FAST - National Directory US Realm

FAST Security & Identity

Description

Servers **2**

Report

Testing & feedback **0 / 0 / 0 / 0**

**Description**

Da Vinci Risk Adjustment Track tests the Da Vinci Risk Adjustment Implementation Guide.

**Leads**

Yan Heras

**Track type**

**Track Type:** igreview

Name	Description	Package / Version	IG page
Da Vinci Risk Adjustment	The Da Vinci Risk Adjustment Implementation Guide describes exchanging risk adjustment coding gaps between payers and providers.	hl7.fhir.us.davinci-ra#0.1.0	<a href="#">View</a>

**Confluence track page**

<https://confluence.hl7.org/display/FHIR/2022-05+Da+Vinci+Risk+Adjustment?src=contextnavpagetreemode> (Opens in a new tab)

**Chat link**

<https://chat.fhir.org/#narrow/stream/311469-Da-Vinci.20Risk.20Adjustment/topic/Connectathon> (Opens in a new tab)

**General links**

Name	Description	View
Touchstone	Touchstone test scripts	<a href="#">Raw</a>

Links of general interest to this track. Open in a separate tab



# Record Testing Results

The screenshot shows the HL7 testing interface. At the top, there are navigation tabs: Home Page, Track details & testing (45), Implementation Guides (54), People (53), Clients (23), Servers (82), Test Results (5), and Participatio. Below the tabs is a search bar for tracks. A list of tracks is on the left, with 'Da Vinci Risk Adjustment' circled in red and labeled '1'. The main area shows a table of test results with columns for Description, Servers (2), and Report. The 'Testing & feedback' header is circled in red and labeled '2'. The table lists various test types, with 'Subject-Patient-In-RA' circled in red and labeled '3'. Below the table, there are fields for 'Asserter' and 'Server', and a button 'Add new result' circled in red and labeled '4'. A green arrow points from the 'Add new result' button to the right-hand panel.

## Result of test: Subject-Patient-In-RA

The screenshot shows the 'Result of test' form for 'Subject-Patient-In-RA'. It includes fields for 'Asserter' (Yan Heras), 'Server' (Risk Adjustment Sandbox), and 'Client'. Below these is a section for 'IG' (Da Vinci Risk Adjustment) with a result selector showing 'Pass', 'Fail', 'Partial', and 'Note'. The 'Note' option is circled in red and labeled '5'. There is also a text area for 'Enter any notes'.

You must select an asserter and a result to save.



# Test Scripts

- Touchstone: <https://touchstone.aegis.net/touchstone/>

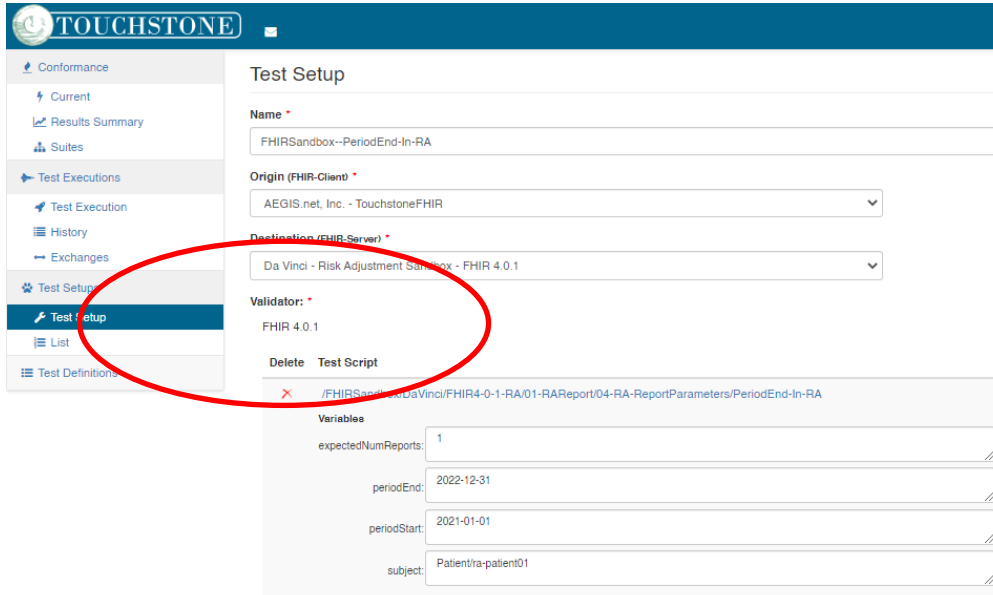
The screenshot displays the Touchstone web application interface. The top navigation bar includes the Touchstone logo, a search icon, and links for 'Docs', 'Sign In', and 'Register'. The main content area is titled 'Test Definitions - /FHIR Sandbox/DaVinci/FHIR4-0-1-RA/01-RAReport'. Below the title, there are search filters for 'Name', 'All', 'Test Scripts', 'Fixtures', and 'Rules', along with a 'Search' button and a 'Clear' button. A table of test definitions is shown, with columns for 'Name', 'Version', 'Description', 'Tests', and 'Validator'. The table lists several test scripts, each with a version of 1 and a description of the test. A red circle highlights the 'Test Script' column header and the first few rows of the table.

Name	Version	Description	Tests	Validator
<input type="checkbox"/> /FHIR Sandbox/DaVinci/FHIR4-0-1-RA/01-RAReport/01-RiskAdj-ReportPatient/dv-risk-adjustment-report-patient-json	1	Da Vinci Risk Adjustment \$report simple tests where the server requests the report using the \$report operation. The server will then return a bundle that contains 1 to many Risk Adjustment Coding Gap Reports. If none exist, an OperationOutcome is expected, however, this test assumes a Coding Gap Report is returned.	1	FHIR 4.0.1 Da Vinci
<input type="checkbox"/> /FHIR Sandbox/DaVinci/FHIR4-0-1-RA/01-RAReport/01-RiskAdj-ReportPatient/dv-risk-adjustment-report-patient-xml	1	Da Vinci Risk Adjustment \$report simple tests where the server requests the report using the \$report operation. The server will then return a bundle that contains 1 to many Risk Adjustment Coding Gap Reports. If none exist, an OperationOutcome is expected, however, this test assumes a Coding Gap Report is returned.	1	FHIR 4.0.1 Da Vinci
<input type="checkbox"/> /FHIR Sandbox/DaVinci/FHIR4-0-1-RA/01-RAReport/02-RiskAdj-ReportGroup/dv-risk-adjustment-report-group-json	1	Da Vinci Risk Adjustment \$report simple tests where the server requests the report using the \$report operation. The server will then return a bundle that contains 1 to many Risk Adjustment Coding Gap Reports. If none exist, an OperationOutcome is expected, however, this test assumes a Coding Gap Report is returned.	1	FHIR 4.0.1 Da Vinci
<input type="checkbox"/> /FHIR Sandbox/DaVinci/FHIR4-0-1-RA/01-RAReport/02-RiskAdj-ReportGroup/dv-risk-adjustment-report-group-xml	1	Da Vinci Risk Adjustment \$report simple tests where the server requests the report using the \$report operation. The server will then return a bundle that contains 1 to many Risk Adjustment Coding Gap Reports. If none exist, an OperationOutcome is expected, however, this test assumes a Coding Gap Report is returned.	1	FHIR 4.0.1 Da Vinci
<input type="checkbox"/> /FHIR Sandbox/DaVinci/FHIR4-0-1-RA/01-RAReport/03-RiskAdj-ReportAdHoc/01-RiskAdjPatientAdHoc/dv-risk-adj-report-patient-adhoc-json	1	Da Vinci Risk Adjustment \$report simple tests where the server requests the report using the \$report operation. The server will then return a bundle that contains 1 to many Risk Adjustment Coding Gap Reports. If none exist, an OperationOutcome is expected, however, this test assumes a Coding Gap Report is returned.	1	FHIR 4.0.1 Da Vinci
<input type="checkbox"/> /FHIR Sandbox/DaVinci/FHIR4-0-1-RA/01-RAReport/03-RiskAdj-	1	Da Vinci Risk Adjustment \$report simple tests where the server requests the report using the \$report operation. The	1	FHIR 4.0.1 Da Vinci



# Test Validator

- STU 1: <https://build.fhir.org/ig/HL7/davinci-ra/>



The screenshot displays the Touchstone web application interface. The left sidebar contains a navigation menu with the following items: Conformance, Results Summary, Suites, Test Executions, Test Execution, History, Exchanges, Test Setup, Test Setup (highlighted with a red circle), List, and Test Definitions. The main content area is titled "Test Setup" and contains the following fields:

- Name \***: FHIRSandbox--PeriodEnd-In-RA
- Origin (FHIR-Client) \***: AEGIS.net, Inc. - TouchstoneFHIR
- Destination (FHIR-Server) \***: Da Vinci - Risk Adjustment Sandbox - FHIR 4.0.1
- Validator \***: FHIR 4.0.1

Below these fields, there are tabs for "Delete" and "Test Script". The "Test Script" tab is active, showing a script for the test setup. The script is titled "FHIRSandboxDaVinci/FHIR4-0-1-RA/01-RAReport/04-RA-ReportParameters/PeriodEnd-In-RA" and contains the following variables:

Variable	Value
expectedNumReports:	1
periodEnd:	2022-12-31
periodStart:	2021-01-01
subject:	Patient/ra-patient01



# Touchstone Information

- See Build and Validate with Touchstone on Da Vinci Implementation Support confluence page for tutorials, registration, and documentations
  - <https://confluence.hl7.org/display/DVP/Da+Vinci+Implementer+Support>
- Participating systems to add your test system in Touchstone



# Testing Draft STU2



# Goal

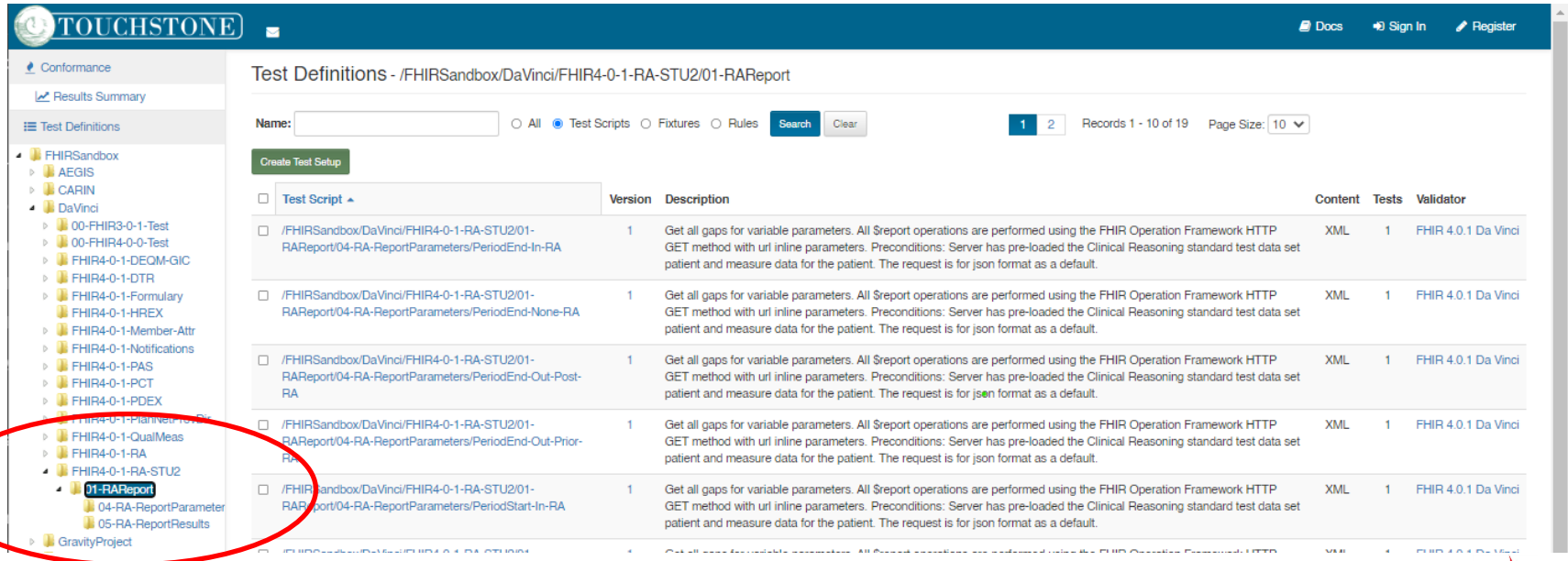
- Preliminary testing of the draft STU2 profiles for conformance





# STU2 Test Scripts

- Touchstone: <https://touchstone.aegis.net/touchstone/>



The screenshot displays the Touchstone web application interface. The top navigation bar includes the Touchstone logo, a search icon, and links for 'Docs', 'Sign In', and 'Register'. The main content area is titled 'Test Definitions - /FHIRSandbox/DaVinci/FHIR4-0-1-RA-STU2/01-RAReport'. Below the title, there is a search bar with a 'Name:' field and radio buttons for 'All', 'Test Scripts', 'Fixtures', and 'Rules'. A 'Search' button and a 'Clear' button are also present. To the right of the search bar, there are page indicators showing '1' and '2', and a 'Records 1 - 10 of 19' status. A 'Page Size: 10' dropdown menu is also visible. A 'Create Test Setup' button is located below the search bar. The main table lists test definitions with columns for 'Name', 'Version', 'Description', 'Content', 'Tests', and 'Validator'. The table contains several rows of test definitions, each with a checkbox in the 'Name' column. The first row is selected. The table data is as follows:

Name	Version	Description	Content	Tests	Validator
<input type="checkbox"/> /FHIRSandbox/DaVinci/FHIR4-0-1-RA-STU2/01-RAReport/04-RA-ReportParameters/PeriodEnd-In-RA	1	Get all gaps for variable parameters. All \$report operations are performed using the FHIR Operation Framework HTTP GET method with url inline parameters. Preconditions: Server has pre-loaded the Clinical Reasoning standard test data set patient and measure data for the patient. The request is for json format as a default.	XML	1	FHIR 4.0.1 Da Vinci
<input type="checkbox"/> /FHIRSandbox/DaVinci/FHIR4-0-1-RA-STU2/01-RAReport/04-RA-ReportParameters/PeriodEnd-None-RA	1	Get all gaps for variable parameters. All \$report operations are performed using the FHIR Operation Framework HTTP GET method with url inline parameters. Preconditions: Server has pre-loaded the Clinical Reasoning standard test data set patient and measure data for the patient. The request is for json format as a default.	XML	1	FHIR 4.0.1 Da Vinci
<input type="checkbox"/> /FHIRSandbox/DaVinci/FHIR4-0-1-RA-STU2/01-RAReport/04-RA-ReportParameters/PeriodEnd-Out-Post-RA	1	Get all gaps for variable parameters. All \$report operations are performed using the FHIR Operation Framework HTTP GET method with url inline parameters. Preconditions: Server has pre-loaded the Clinical Reasoning standard test data set patient and measure data for the patient. The request is for json format as a default.	XML	1	FHIR 4.0.1 Da Vinci
<input type="checkbox"/> /FHIRSandbox/DaVinci/FHIR4-0-1-RA-STU2/01-RAReport/04-RA-ReportParameters/PeriodEnd-Out-Prior-RA	1	Get all gaps for variable parameters. All \$report operations are performed using the FHIR Operation Framework HTTP GET method with url inline parameters. Preconditions: Server has pre-loaded the Clinical Reasoning standard test data set patient and measure data for the patient. The request is for json format as a default.	XML	1	FHIR 4.0.1 Da Vinci
<input type="checkbox"/> /FHIRSandbox/DaVinci/FHIR4-0-1-RA-STU2/01-RAReport/04-RA-ReportParameters/PeriodStart-In-RA	1	Get all gaps for variable parameters. All \$report operations are performed using the FHIR Operation Framework HTTP GET method with url inline parameters. Preconditions: Server has pre-loaded the Clinical Reasoning standard test data set patient and measure data for the patient. The request is for json format as a default.	XML	1	FHIR 4.0.1 Da Vinci



# STU2 Test Validator

- STU 2: <http://build.fhir.org/ig/HL7/davinci-ra/branches/Draft-STU2-Branch/>

**TOUCHSTONE**

Conformance

- Current
- Results Summary
- Suites

Test Executions

- Test Execution
- History
- Exchanges

Test Setup

- Test Setup**
- List
- Test Definitions

**Test Setup**

Name \*  
FHIRSandbox--Result-One-In-RA

Origin (FHIR-Client) \*  
AEGIS.net, Inc. - TouchstoneFHIR

Destination (FHIR-Server) \*  
Da Vinci - Risk Adjustment Sandbox - FHIR 4.0.1

Validator: \*  
FHIR 4.0.1 Da Vinci

Delete Test Script

Variables

expectedNumReports: 1

periodEnd: 2021-12-31

periodStart: 2021-01-01

subject: Patient/ra-patient01



# STU2 Test Instructions

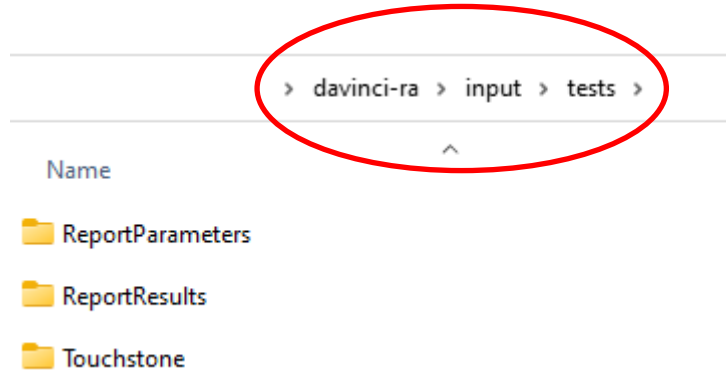
- ReadMe: <https://github.com/HL7/davinci-ra/tree/Draft-STU2-Branch#testing>

```
☰ README.md ✎  
  
🔗 davinci-ra  
  
Da Vinci Risk Adjustment  
  
Testing  
  
Directory Structure  
  
.  
├── bundles           # FHIR Bundle(s) that contain the test Resources from the tests directory  
├── input  
│   └── tests  
│       ├── Touchstone # Touchstone tests  
│       └── *           # Directories that contain test data as FHIR Resources  
└── _bundle           # Script that posts FHIR Bundle(s) from the bundles directory to a FHIR Server  
  
Reference Implementation Endpoint  
  
https://cloud.alphora.com/sandbox/r4/ra/fhir/
```



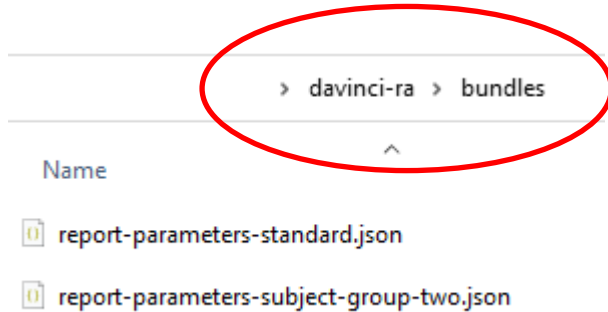
# STU2 Test Data

- Github: <https://github.com/HL7/davinci-ra/tree/Draft-STU2-Branch/input/tests>



# STU2 Test Bundles

- Github: <https://github.com/HL7/davinci-ra/tree/Draft-STU2-Branch/bundles>



# QUESTIONS/NEXT STEPS



# Next Steps

- Join the HL7 Connectathon Kickoff on Monday, May 2<sup>nd</sup> at 4:00 pm ET through Whova
- Review specifications and participate
- If you have not already, please create an account for HL7 Confluence/Jira, Touchstone, Connectathon Manager, and subscribe to the Da Vinci Risk Adjustment Zulip stream
  
- Contacts:
  - Yan Heras: [yan.heras@optimumhealth.com](mailto:yan.heras@optimumhealth.com)
  - Rob Reynolds: [rob@alphora.com](mailto:rob@alphora.com)



# FHIR Specifications

- Da Vinci Risk Adjustment IG:
  - <https://build.fhir.org/ig/HL7/davinci-ra/>
  - <http://build.fhir.org/ig/HL7/davinci-ra/branches/Draft-STU2-Branch/index.html>
- FHIR Specification (R4): <http://hl7.org/fhir/index.html>
- US Core: <http://hl7.org/fhir/us/core/>
- Bulk Data Access IG: <http://hl7.org/fhir/uv/bulkdata/>
- Da Vinci Member Attribution IG: <http://hl7.org/fhir/us/davinci-atr/>
- Da Vinci Clinical Data Exchange (CDex): <http://hl7.org/fhir/us/davinci-cdex/2022May/>

