

# 2020-05 CDS Hooks Track

## Track Report

### Submitting WG/Project/Implementer Group

CDS

### Justification and Objectives

CDS Hooks provides a powerful framework for remote decision support, leveraging the power of FHIR as well as the ability to suggest a SMART App launch. CDS Hooks has made its way into some DaVinci use-cases and as a launching point for SMART Web Messaging. As an HL7 standard with proposed enhancements for a 1.1 version, the connectathon will help solidify and mature those developments.

That being the case, the primary objectives for this track will be

- CDS Hooks 1.0 integrations focused on returning information cards, suggestion cards, and SMART App link cards
- Testing 1.1 candidate functionality
- Testing proposed patient-view updates

This track will use R2-R4 versions of FHIR.

### Related tracks

[2020-05 Clinical Reasoning](#)

[2020-05 Da Vinci CRD/DTR/PAS](#)

### Proposed Track Lead

Dennis Patterson (<https://chat.fhir.org/#narrow/sender/191358-dennis.patterson>)

### Expected participants

- Cerner
- Epic
- Alphora
- Humana
- T-System
- Wolters Kluwer
- University of Utah
- Appriss Health

### Logistics and Schedule

**Participant Tracking:** <https://bit.ly/cds-hooks-connectathon-tracking>

**Track Zulip Stream:** <https://chat.fhir.org/#narrow/stream/179159-cds-hooks/topic/May.202020.20Connectathon>

#### Rooms

Connectathon GoToWebinar (*link in your e-mail*) - [main schedule](#)

[Track Zoom room](#)

#### Schedule

Wednesday, May 13

4PM ET - Connectathon Kick-off at 4PM ET in GotoWebinar

Immediately after above kick-off - Track kickoff in Zoom

Thursday, May 14

9AM ET - FHIR Overview in GoToWebinar (*Optional*)

10AM ET - Track Daily Sync / Mini Kick-off in Zoom

2:30PM ET - 15-minute Track Overview and CDS Hooks 1.1 Plans in GoToWebinar (*Optional*)

3PM ET - Track Daily Sync in Zoom

6:30PM ET - Connectathon Day 1 Wrap-up in GoToWebinar

Friday, May 15

9AM ET - Connectathon Morning Announcements in GoToWebinar

10AM ET - Track Breakout in Zoom - Review progress, discuss issues, next Connectathon planning

3PM ET - Track Daily Sync in Zoom

6PM ET - Connectathon Event Wrap-up in GoToWebinar

## Track Orientation

A webinar will be hosted over Microsoft Teams to share further participation information about this track.

**Tuesday, May 5th, 2020 10:00 am | 1 hour | Central Time (US & Canada)**

[Join Microsoft Teams Meeting](#)

+1 816-384-1534 United States, Kansas City (Toll)

Conference ID: 426 675 794#

[Local numbers](#) | [Learn more about Teams](#)

Slides: <https://bit.ly/cdshooks-24-orientation>

Recording:



CDS Hooks Connec... Orientation.mov

## System Roles

**CDS Service Provider** - The CDS Service Provider role provides real-time clinical decision support as a remote service. The CDS Service is invoked on a desired hook and returns the decision support in the form of CDS cards. Those cards can also include a link to a SMART App.

**CDS Client / EHR** - The CDS Client will allow for the registration of interested CDS services on various CDS hooks, triggering each appropriately. The EHR will also display the CDS cards (obtained from the CDS services) to the user and provide the ability to launch a SMART App.

## Scenarios

### v1.0 Integrations

#### Information Card

Action: CDS Service returns info card, CDS Client (EHR) accepts display info card.

Precondition: Read the [Quick Start Guide](#). Explore the [CDS Hooks sandbox](#).

Success Criteria: CDS Client (EHR) or sandbox displays info card.

Bonus point: CDS Service queries FHIR server while generating card.

#### App Link Card

Action: CDS Service returns app link card, CDS Client (EHR) accepts app link card.

Precondition: N/A

Success Criteria: CDS Client (EHR) or sandbox displays app link card.

Bonus point: CDS Client (EHR) generates SMART launch token, SMART app performs SMART handshake with OAuth2 server.

#### Suggestion Card

Action: CDS Service returns suggestion card, CDS Client (EHR) accepts suggestion card.

Precondition: N/A

Success Criteria: CDS Client (EHR) displays actionable suggestion card.

Bonus point: N/A

### v1.1 Candidates

#### Card Interaction

##### Override Reasons

Action: CDS Service returns an array of override reasons with a card.

Precondition: Read about [card.overrideReasons](#) and the [OverrideReason structure](#).

Success Criteria: CDS Client gives ability to view override reasons on a card.

Bonus point 1: CDS Client allows selection of a service-provided reason when choosing not to follow the card's guidance.

Bonus point 2: CDS Client augments service-provided override reasons with any native override reasons.

##### Providing Feedback to CDS Services

Action: CDS Client displays a card from a CDS Service. CDS Client reports any card interactions back to the CDS Service's feedback endpoint.

Precondition: Read the [pending pull request](#) and [wiki documentation](#). (Update with a link to the spec once merged.)

Success Criteria: CDS Service receives feedback on user interactions to a card.

Bonus point: CDS Service receives a service-supplied override reason that the user selected when a card's guidance is not followed.

#### Multiple Suggestion Interactions

Action: CDS Service returns a card with multiple suggestions, more than one of which are safe to be accepted in combination.

Precondition: Read about ['any' as a card.selectionBehavior](#) and [suggestion.isRecommended](#).

Success Criteria: CDS Client allows multiple suggestions to be accepted rather than limiting to only one.

Bonus point: CDS Service indicates that one of the suggestions is recommended among the choices. CDS Client renders it preselected for acceptance.

## **Card Categorization**

Action: CDS Service returns a topic on a card to provide categorization denoting the nature of the guidance.

Precondition: Read about [card.source.topic](#).

Success Criteria: CDS Client receives the topic successfully.

Bonus point: CDS Client uses topic in logic to process multiple cards with the same category of guidance.

## **Hooks**

### **patient-view with a PractitionerRole user**

Action: CDS Client invokes patient-view hook with a PractitionerRole user. CDS Service defines prefetch request to retrieve PractitionerRole user, including other resources it references.

Precondition: Read the [pending pull request](#) and [logged issue around prefetch issues](#) with the current representation of context.userId.

Success Criteria: CDS Service successfully returns guidance based on hook invocation.

Bonus point: CDS Client fulfills prefetch requests related to PractitionerRole retrieval.

## **Security and Privacy Considerations**

<https://cds-hooks.org/specification/current/#security-and-safety>