# 2022-05 CDS Hooks

- **Short Description**
  
  CDS Hooks is a specification for leveraging remote web services to facilitate Clinical Decision Support. This track focuses on maturing the standard to enable providing helpful and meaningful guidance to a user at the right points in their workflow via clinical decision support services.

- **Long Description**
  
  HL7’s CDS Hooks specification provides a powerful framework for remote decision support, tying together multiple HL7 standards. It leverages the power of FHIR for providing patient data and facilitating user suggestions, allows the ability to suggest a SMART App launch, and is a launching point to enable SMART Web Messaging. As an HL7 standard with balloted enhancements for a 1.1 version, the connectathon will continue to solidify and advance the specification’s maturity.

  The primary objectives for this track will be:
  
  - CDS Hooks 1.1 integrations focused on returning information cards, suggestion cards, and SMART App link cards
  - Testing new proposed additions to CDS Hooks.

- **Type**
  
  Test an implementation guide

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- **Submitting Work Group/Project/Accelerator/Affiliate/Implementer Group**

  CDS

- **Track Lead(s)**

  Isaac Vetter

- **Track Lead Email(s)**

  isaac@epic.com

- **Related Tracks**

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- **Specification(s) this track uses**

  [https://cds-hooks.org/](https://cds-hooks.org/)

- **Artifacts of focus**

  The last few connectathons have include 2-3 CDS services, a production CDS Client and a CDS client sandbox.

- **Expected participants**

  The last few connectathons have include 2-3 CDS services, a production CDS Client and a CDS client sandbox.

- **Zulip stream**

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Track Kick Off

Call

Track Details

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.

Read the Quick Start Guide. Explore the CDS Hooks sandbox.

Scenarios

patient-view

Action: Open Patient's Chart, CDS Client notifies CDS Service about patient-view hook event. CDS Service returns various decision support guidance (see below).

Success Criteria: CDS Client (EHR) or sandbox displays card(s) and applies supported system actions.

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

Bonus point 2: CDS Client reports card interactions back to CDS Service via feedback endpoint (see below).

order-select and/or order-sign

Action: Upon order selection or order placement (MedicationRequest or ServiceRequest), CDS Client notifies CDS Service about order-select or order-sign hook event, respectively. CDS Service returns various decision support guidance (see below).

Success Criteria: CDS Client (EHR) or sandbox displays card(s) and applies supported system actions.

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

Bonus point 2: CDS Client reports card interactions back to CDS Service via feedback endpoint (see below).

Decision Support Guidance Options

Cards

- Textual Guidance - Card details populated with GitHub-flavored markdown
- App Link - contains SMART launch url. Upon clicking link within CDS Client, SMART App is launched, app performs handshake with OAuth 2 server, and app is usable.
- Suggestions - contains one or more actionable suggestions. Upon accepting suggestion(s), the CDS Client applies the chosen action(s):
  - v1.0 - Return mutually exclusive suggestions (only one may be accepted)
  - v1.1 - Optionally return modular suggestions (multiple may be accepted), card.selectionBehavior set to 'any'.
- Topic (v1.1) - return topic metadata about the nature of the decision support.
- OverrideReasons (v1.1) - array of reasons a user might choose to override the card. (Read about card.overrideReasons and reasons for rejecting a card.). Bonus if the CDS Client renders these alongside native override reasons.

System Actions (v1.1)

CDS Service returns one or more system actions that the CDS Client should auto-apply without user interaction. Allowable system actions are up to the discretion of the CDS Client, but an example might be a score value, such as what was done in Argonaut’s PAMA Guidance.

Feedback

The CDS Service exposes a feedback endpoint. The CDS Client is able to report accepted suggestions and/or overridden cards with selected override reasons.
TestScript(s): N/A

Security and Privacy Considerations: