2020-01 SMART Web Messaging and CDS Hooks

Submitting WG/Project/Implementer Group

FHIR-I

Justification and Objectives

2020 is an important year in the PAMA Imaging requirements timeline and, as many practices are relatively unprepared for PAMA, there is an opportunity for vendors to bring a CDS Hooks and SMART Web Messaging enabled solution to the market.

One objective of this track would be to facilitate a participant testing such a solution against reference materials (the CDS Hook sandbox, the SMART app launcher, etc).

Another objective would be to understand where new features are needed in the reference solutions.

This track will use what version of FHIR.

R4

Clinical input requested (if any)

No input is needed, although feedback from clinicians would be most welcome.

Related tracks

If there is a separate, CDS Hooks, track - seating near them would be ideal.

Proposed Track Lead

Carl Anderson, carl.anderson@microsoft.com.

Expected participants

Since this is the first ever CMS connectathon, it's hard to predict from previous events who will want to attend this track. However, given that PAMA Imaging should be a very popular topic in 2020, I expect there will be great interest among both EHR vendors and QCDSM software providers.

Track Orientation

A webinar will be hosted (tentatively) on 2019-12-12 at noon Central to share further participation information about this track. Use this Go To Meeting Link for Track Orientation.

An ics file can be downloaded and saved to your calendar: SMART_Web_Messaging_Track_Orientation.ics

Join the webinar online: HERE

Slides: **TODO**

Recording: **TODO**

System Roles

EHR Vendors

EHR vendors will be expected to have a working order-select hook in place if they wish to test the reference CDS hook service. To test the SMART Web Messaging functionality of the reference solution, they should have HTML5 Web Messaging also enabled in their user interface.

QCDSM / SMART App Vendors

QCDSM vendors who intend to test a CDS Hook Service should have an order-select hook service ready to respond to (at least) the scenarios outlined below. SMART App vendors should have an app capable of performing a SMART launch to inherit EHR context. Ideally, the SMART app should also be able to update the EHR based on selection changes made in-app via SMART Web Messaging.

All Participants

It wouldn't hurt any of the track participants to complete the codelab outlined here:
https://microsoft-healthcare-madison.github.io/demo-auc-app

This set of codelab exercises should take 2 to 5 hours to complete and will provide familiarity with the reference materials and the relevant APIs and documentation.

Scenarios

The following scenarios will take advantage of the code provided in the companion codelab wherever possible. In some cases, minor modifications to the code may be needed, but in many no changes are required.

EHR Vendors

Scenario 1 - order-select hook

Precondition	Implement the order entry, `order-select` CDS hook.
Precondition	Connect the reference CDS hooks service found in codelab v2.0: https://github.com/microsoft-healthcare-madison/demo-auc-app
Action	Select a diagnosis of SNOMED **279039007** (low back pain) and image order of CPT **72133** (CT lumbar - no contrast).
Success	EHR user interface displays a warning card, indicating that the selected order is outside of guidelines.
Bonus	TBD

Scenario 2 - SMART app launch

Precondition	Satisfy all preconditions in Scenario 1.
Precondition	Run the reference SMART App service found in codelab v3.0: https://github.com/microsoft-healthcare-madison/demo-auc-app
Action	Select a diagnosis of SNOMED **279039007** (low back pain) and image order of CPT **72133** (CT lumbar - no contrast).
Action	Click the SMART app launch link on the displayed card.
Success	The linked app launches, either within an embedded iframe or within a new tab in the EHR. Focus is changed to the new app.
Bonus	Closing the launched app returns focus to the order entry screen.

Scenario 3 - SMART Web Messaging

Precondition	Satisfy all preconditions in Scenario 2.
Action	Select a diagnosis of SNOMED **13213009** (congenital heart disease) and image order of CPT **71275** (cta with contrast material) in the mock EHR.
Action	Click the SMART app launch link on the displayed card.
Action	Change the selected order in the SMART app to **75561** (cardiac mri)
Action	Click the button to 'update the order', which will have an effect in the mock EHR.
Success	The app closes automatically, returning focus to the EHR.
Success	The order now contains 75561 (cardiac mri) and **not** 71275 (cta with contrast material).

| Bonus | Closing the launched app returns focus to the order entry screen. |

QCDSM Vendors

Scenario 1 - order-select CDS hook service

Precondition	The combination of codes (diagnosis: SNOMED **279039007** and order: CPT **72133**) is rated as **not-appropriate**.
Precondition	You have implemented a CDS Hook service for **order-select** to evaluate order appropriateness and return a card for non-appropriate selections.
Precondition	You have configured the CDS hook sandbox to use your service.
Action	Select a diagnosis of SNOMED **279039007** (low back pain) and image order of CPT **72133** (CT lumbar - no contrast).
Success	Sandbox displays a warning card, indicating that the selected order is outside of guidelines.
Bonus	TBD

Scenario 2 - CDS hook systemAction

Precondition	The combination of codes (diagnosis: SNOMED **13213009** and order: CPT **75561**) is rated as **appropriate**.
Precondition	When a user has selected an **appropriate** combination of order and diagnosis, a system action inserts evidence of guideline consultation into the order automatically.
Precondition	Configure the CDS hook sandbox to use your service.
Precondition	You have disabled the default `pama-imaging` service in the CDS Hooks sandbox.
Action	Select a diagnosis of SNOMED **13213009** (congenital heart disease) and image order of CPT **75561** (cardiac mri).
Success	The CDS Hooks Sandbox displays the **appropriate** PAMA rating.
Bonus	Your service may chose to return a card for **appropriate** selections, to indicate to the user that their selection meets guidelines.

Scenario 3 - SMART launch

Precondition	Your app is configured to use the SMART launch framework, providing a launch endpoint.
Precondition	Your launch endpoint initiates a SMART launch, requesting the provider and patient scopes.
Precondition	Using the SMART App Launcher tool, you have configured your launch URL.
Precondition	You have also pre-selected a patient and a provider in the SMART App Launcher.
Action	Click the Launch App button in the SMART App Launcher
Success	The SMART App Launcher displays a mock EHR frame around your embedded app.
Bonus	Your app displays a provider and patient picker when these have not been pre-selected in the SMART App Launcher configuration.

TestScript(s)

Functionality is currently tested and confirmed by using helper tools, such as the SMART App Launcher and the CDS Hooks sandbox.

Security and Privacy Considerations

For a SMART launch to take advantage of the openid scope, the connected app must enable OAuth openid connect in advance.