



**CDS Connect Work Group
Meeting Summary
July 26, 2018
3:00-4:30 PM EST**

Attendees

AHRQ Sponsors	Shafa Al-Showk, Ric Ricciardi
Work Group Members	Apurva Desai, Barry Blumenfeld, Bijal Shah, Maria Michaels, Daniel Seltzer, Danny Van Leeuwen, David Foley, Frank Sonnenberg, Jeremy Michel, John Kefalas, Julia Skapik, Kavitha Raj, Laura Marcial, Marc Sainvil, Marijo Carnino, Matt Pfeffer, Michael Wittie, Molly McCoy, Nedra Garrett, Noam Arzt, Preston Lee, Randolph Barrows, Robert Badgett, Stephen Loureiro
MITRE CDS Connect Project Members	Ginny Meadows, Chris Moesel, David Winters, Dylan Mahalingham, Kevin Hennessy, Sharon Sebastian

The MITRE Corporation operates the Centers for Medicare & Medicaid Services (CMS) Alliance to Modernize Healthcare (CAMH), a federally funded research and development center (FFRDC) dedicated to strengthening the nation's health care system. MITRE operates CAMH in partnership with CMS and the Department of Health and Human Services.

Agenda

- Welcome and brief review of meeting objectives and the agenda
- Demonstration of new Authoring Tool Testing features
- Discussion of Future CDS Connect Authoring Tool Efforts (continued from last month)
- Demonstration of the CDS Hooks Prototype Tool
- Presentation on the Groups Capability
- Pilot Update
- Closing

Action Items

None

Meeting Summary

Welcome

MITRE started the meeting by welcoming participants and reviewing the names of work group members participating in the call. Maria Michaels then reviewed the agenda and facilitated the rest of the discussion.

Overall:

The meeting included a discussion on future planning for the Clinical Decision Support (CDS) Connect Authoring Tool (AT), continued from the June work group meeting. The new testing feature for the CDS Connect AT was demonstrated, as well as the CDS Hooks prototype. A presentation was also provided on the new Groups capability. In addition, updates on the current pilot were provided. During each presentation, work group member ideas, suggestions and concerns were encouraged.

New Testing Feature, CDS Connect Authoring Tool, Dylan Mahalingam (MITRE)

Dylan Mahalingam demonstrated the new testing feature for the CDS Connect AT using a sample artifact. The following features are included and were demonstrated:

- a. Adds the ability to test artifacts from the Authoring Tool
- b. Accessed from the new Testing tab at the top of the screen
- c. The user can add synthetic patients using different tools (e.g. Synthea)
- d. The testing feature allows the user to review the synthetic patient data
- e. The user can then execute the clinical quality language (CQL) against the synthetic patient data and review the results

Dylan invited questions and comments from the work group.

- a. A work group member asked how it was decided that gender was an exclusion versus an inclusion criterion. Dylan responded that for purposes of the testing demo, he had set it up this way but agreed gender could be set up as inclusion criteria.
- b. A work group member asked if the operation could be run against more than one patient. Dylan stated that they hoped to add this capability in future revisions of the testing feature.
- c. A work group member asked if a user could customize the inclusion and exclusion criteria. Chris Moesel responded that presently, inclusion and exclusion criteria is limited to certain capabilities and that writing more complex inclusion criteria such as mathematical equations are not supported now, but the MITRE team would like to add this in future revisions as well as add the capability to directly import CQL.
- d. Maria Michaels asked if this was live now on the Repository. Dylan responded that it was not yet live, but would be in the next few weeks.

Future Planning for CDS Connect Authoring Tool, Chris Moesel (MITRE)

Chris Moesel reviewed the summary slide for the potential fiscal year (FY) 2019 CDS Connect Authoring Tool (AT) feature updates for additional discussion and input from the CDS Connect work group members. The full presentation was provided in the June meeting but limited time was available for discussion in that meeting. The CDS Connect AT potential FY2019 feature updates include:

- a. CQL authoring for other versions of Fast Healthcare Interoperability Resources (FHIR)
- b. Integration with the CDS Connect Repository
- c. Additional user-facing testing capabilities (e.g. testing against more than one patient, etc.)
- d. Comments (add to CDS Expressions)
- e. Additional terminology sources for value set and code searches
- f. CQL 1.2 error handling
- g. Additional CQL operators (math, timing, etc.)
- h. Advanced query construction
- i. Import and reference external CQL libraries
- j. Direct CQL entry
- k. Cross-artifact re-usable elements
- l. Additional CDS types (today, most artifacts are event-condition-action (ECA) types. In the future, additions could include documentation templates, order sets, etc.)
- m. Revision control (currently, the history of versions is not retained in the AT)

Chris mentioned that specifically, interest in expanding the types of logic and expressions supported has been expressed by others, as well as providing additional operators and being able to import CQL directly into the AT. He invited additional comments from the work group.

- a. A work group member commented that revision control might help incentivize authors by isolating their contribution, to provide credit for their individual work. Chris responded that the revisions would not be at the Authoring Tool level.
- b. A work group member suggested that adding additional terminology sources, such as the Public Health Information Network (PHIN) Vocabulary Access and Distribution System (VADS), is an important feature. In addition, feedback from people working on CDS projects would be valuable, especially on additional CQL operators. Another workgroup member added that implementing additional ways to use terminology servers would also be helpful. This would allow publication of value sets that are not yet 'officially' published.
- c. A workgroup member recommended that the ability to query other application programming interfaces (APIs) was important (e.g. FHIR versus resource).
- d. Maria Michaels asked if feedback has come from anyone else besides the work group members. Chris responded that not many requests for new features have been received, other than requests to build out integration with the Value Set Authority Center. He also mentioned the earlier feedback obtained on implementing additional FHIR versions. Maria commented that the enhancements for additional terminology sources, CQL operations, and additional FHIR versions were important. She suggested using a survey to get additional feedback. Chris responded that there may be barriers due to the Paperwork Reduction Act, but the team could consider that option. Maria offered her help.

CDS Hooks Prototype Tool, Chris Moesel (MITRE)

Chris Moesel demonstrated the CDS Hooks Prototype Tool. CDS hooks is an API, FHIR-based, simple interaction between an electronic health record (EHR) service and external CDS. The basic functionality consists of the following:

- Something happens in the EHR that triggers a web-based API to CDS Hooks service. Chris showed the graphic from the CDS Hooks website.
- Returns information as cards, and there are 3 different kinds:
 - Information card
 - Suggestion card – such as order a different medication
 - Smart app link card - launches a smart app
- CDS Hooks doesn't care about the details. The CDS service could invoke CDS expressed as CQL
- We believe a number of EHRs will support CDS Hooks
- CDS Hooks Sandbox - allow you to test using an EHR-like framework.

Chris invited comments and questions from the workgroup.

- a. A workgroup member asked if this used FHIR. Chris responded that there are a couple of ways to get data, and the prototype he is demonstrating requires that all data goes through a prefetch routine.
- b. A workgroup member asked if there is a specific run time, and what it is called. Chris refers to it as “CQL Hooks”, and it has two APIs - one that uses the CDS Hooks API, and the other API is more proprietary. Both are bundled.
- c. A member asked if this would bundle query runner in the future. Chris responded that since we don't have a direct need for CDS Hooks today, there are no plans to enhance this, but it may depend on the needs of the next CDS Connect pilot.
- d. Chris also commented that they hoped to make this prototype open source.

Groups Capability, Dave Winters (MITRE)

Dave Winters provided a presentation of the Groups capability. The Groups feature was discussed in the April work group meeting, and is now implemented in the Repository. It allows improved governance of who can access specific content. Initially, the Authoring Tool allowed all users to see everything. Now, a user can be a member of one or more groups. The users in a group can collaborate, but the content is not visible to users outside the group. Chris Moesel clarified that this only applies to artifacts that have not been published. Once an artifact is published, everyone can see it.

Dave invited comments and questions from the work group members.

- a. A work group member asked if revisions to a previously published artifact can be staged and not visible. Dave confirmed that new revisions are visible only to group members until the revision is published.
- b. Maria Michaels asked about administrative rights. Dave responded that users in a group can have multiple roles, such as author, editor, publisher or governor.
- c. A work group member asked who provided governance over revisions. Dave responded that for now, this will be MITRE. Maria commented that we will continue to have discussions around governance, and Sharon Sebastian added that work is currently being done related to trust and governance by the Patient Centered Outcomes Research CDS-Learning Network (PCOR CDS-LN), who presented their early findings to the work group last month.

Status of Pilot, Ginny Meadows (MITRE)

Ginny Meadows provided an update on pilot activities.

- a. Completed activities reported in the June pilot update were reviewed, along with those activities that have been completed this month. July completed activities include:
 - i. Weekly analytics and troubleshooting
 - ii. Planning for pilot focus group
- b. The upcoming activities include:
 - i. Continue weekly analytics and troubleshooting
 - ii. Finalize pilot focus group questions
 - iii. Pilot End Date: Friday, 8/20/2018
 - iv. Conduct Focus Group sessions (8/13/2018 & 8/14/2018)

Open Discussion and Closeout

Maria Michaels announced that the Public Health Informatics Conference would be taking place in Atlanta from August 20 - 23. Shafa Al-Showk (AHRQ) and Maria are presenting a talk on CDS Connect on August 22 at 4pm.