**CDS Connect Work Group
Meeting Summary
August 29, 2019
3:00-4:30 PM EST**

Attendees

AHRQ Sponsors	Shafa Al-Showk, Roland Gamache, Ed Lomotan, Mary Nix, Steve Bernstein
Work Group Members	Anthony Gerardi, Brian Brooks, Bryan Bagdasian, Danny Van Leeuwen, India Duncan, Kevin Larsen, Majid Afshar, Maria Michaels, Noam Artz, Randolph Barrows, Ruben Nazario, Ryan Mullins
MITRE CDS Connect Project Members	Ginny Meadows, Chris Moesel, Dave Winters, Dylan Mahalingam, Howard Gershen, Julie Afeltra, Lacy Fabian, Noranda Brown, Sharon Pacchiana, Sharon Sebastian

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

Agenda

- Welcome and brief review of meeting objectives and the agenda
- Share information on Trust Framework Work Group (TFWG) enhancements and MedStar Usability Evaluation analysis
- Share final information on b.well pilot analytics, survey responses, and lessons learned
- Share insights and lessons learned from CDS Connect pilot implementations
- Share an update on the clinical decision support (CDS) Connect Sustainability Path Project
- Closing

Action Items

- Send an email to Work Group (WG) members along with today's presentation asking for additional feedback on the topics presented (Done)

Meeting Summary

Welcome

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

Overall:

The meeting opened with a discussion about potential enhancements to the Repository based on TFWG recommendations, as well as the analysis performed by the MedStar CDS Connect Usability Evaluation project. In addition, the CDS Connect team provided a final update on the pilot, including the analytic reports, end user survey responses, and lessons learned from this year's pilot, as well as from the past three years of CDS Connect pilots. The meeting also included an update and discussion on the CDS Connect Sustainability Path project. During each presentation, WG member ideas, suggestions and concerns were encouraged.

CDS Connect TFWG Enhancements, Lacy Fabian (MITRE)

Lacy Fabian began the discussion by providing a brief overview of the associated TFWG attributes and recommendations and the related possible enhancements to the CDS Connect Repository. She discussed a phased implementation approach, beginning with enhancements to user accounts and the ability to collect user preferences for subscribing to updates among other features. Lacy also described potential components for Phase 2 and future phases. She asked the WG members for reactions to the proposed phases and associated features, as well as any considerations for implementing the feedback feature.

Lacy invited questions and comments from the WG. WG comments include:
   a. A WG member asked if there was any information available on the use of the content already available on CDS Connect.
      i. Sharon Sebastian commented that contributions have increased from 12 or 13 artifacts at end of last year to about 56 at the end of this project year.
      ii. The WG member asked if there was a goal or vision for the number of CDS Connect artifacts.
      iii. Sharon mentioned that the focus was to make it as easy as possible to contribute artifacts. One enhancement that helped contributors was the addition of an application program interface (API) to help reduce the burden associated with manual entry of artifact metadata; this assisted in the ease of contributing artifacts by automating and standardizing metadata inputs. She also mentioned that the CDS Connect team is continually seeking feedback and insight.
   b. A WG member suggested providing a capability that enables a CDS viewer to comment on specific clinical domain for artifacts that they are interested in but haven't found. The WG member thought that this might help a contributor understand potential CDS development topics.
   c. A WG member asked if the CDS Connect team had information on whether people were interested in the ability to give and receive feedback.
      i. Lacy responded that this meeting is one way for us to hear from others about what enhancements are most important, as well as other ideas.

ii. Ed Lomotan also mentioned that in the past, some contributors had raised the feedback feature as important to providing information on safety concerns, CDS bugs, or updates to the CDS.

d. A WG member mentioned that as a contributor, he wasn't sure how to update his contribution on the Repository.

i. Ed mentioned this was a separate but related issue and encouraged him to get in touch with the CDS Connect team if he needed help.

e. A WG member suggested auto-subscribing every user to anything safety related.

f. A WG member asked if the team had considered how to share this with the "lay activist" community, if only to communicate how challenging this is to accomplish. He commented that these individuals often don't realize the challenges related to many of these aspects. He invited others to think about how to get the "citizen experts" more involved in these efforts.

g. A WG member thanked AHRQ and the CDS Connect team for doing this work and thinking about these capabilities. He felt this was an investment in the future. He suggested that enhancing provenance and "currency" should be a key consideration (i.e., who submitted something and how recently). He mentioned that it needs to be clear to potential users of an artifact exactly which version is up-to-date and what changes have been made.

Lacy then provided an overview of the team's analysis of the Medstar CDS Connect Usability Evaluation recommendations, and their intersection with the TFWG recommendations. This work will help to further prioritize the recommendations. She mentioned that potential next steps might include redesigning the artifact page to ensure consistency across each artifact, revising instructions to contributors, and other changes to the Repository. Lacy asked the WG for additional thoughts:

a. A WG member asked if there had been any discussion on having a place on the Repository for decision support as a service?

i. Chris Moesel responded that although nothing would prevent the inclusion of a link to this now, the Repository has focused on open and transparent information. Artifacts expressed using the Clinical Quality Language (CQL) allow a user to review and understand the logic. With CDS as a service, understanding the logic can be a "black box," with limited transparency. There may also be licensing issues to consider.

ii. The WG member commented that he was thinking specifically about the fairly complicated immunization tables that the Centers for Disease Control and Prevention (CDC) maintains. If the user trusts the CDC, a CDS Connect-hosted API for the immunization CDS rules would simplify access and promote sharing.

b. A WG member asked if it could be as simple as making sure there is a link on the Repository to get to the CDS as a service.

i. Chris Moesel responded that contributors can list related Uniform Resource Locators (URL) with their artifacts now, but if we wanted to add special features for service API URLs, it would need to be prioritized against other potential enhancements.

ii. Ed Lomotan commented that today, CDS Connect is more of a filing cabinet for artifacts, but it would be interesting to consider how CDS Connect might provide better support for and interaction with CDS service APIs.

iii. Dave Winters commented that several of the artifacts on CDS Connect use interoperable healthcare standards (e.g., Fast Healthcare Interoperability Resources [FHIR] profiles and/or implementation guides) to describe how they should be integrated with other services. He also mentioned that an external pilot had wrapped

CDS Connect within a separate service, with the rules being stored on CDS Connect but then being served up by the wrapping service.

Final b.well Pilot Update, Ginny Meadows (MITRE)

Ginny Meadows provided an update on the pilot, which has now officially ended. She thanked the pilot partner, b.well, for their efforts and innovative approach to providing patient-facing CDS. Quantitative data from the final analytics reports produced by b.well included the total size of the population, the number of users meeting the CDS criteria for each recommendation, and user response rates to the CDS notifications. The user survey provided informative qualitative information on the user responses to the survey, which was sent to a limited number of end users who had completed a "challenge" (i.e., viewed an educational video or information, or scheduled an appointment with their primary care clinician). Ginny praised b.well's efforts in developing the challenges, as demonstrated by the positive responses to the survey questions. All of these metrics are included on the associated slide deck posted with the meeting notes.

Ginny also discussed the "Lessons Learned" that the CDS Connect team gained from the pilot this year. One of these concerned the multiple sources of information that b.well aggregates, which provided opportunity for a large amount of data and good coverage of the clinical concepts but also introduced challenges, in the standardization and specificity of the data. This in turn required extensive data mapping by b.well. In addition, the limited experience of the b.well technical team with the standards used (e.g., CDS Hooks, FHIR and CQL) increased the integration effort and time. Although not surprising given the relative newness of the standard, this should be considered when planning future implementations. Finally, the pilot benefitted from b.well's experience and expertise in providing consumer-facing resources and tools.

Ginny invited questions and comments from the WG, but there were none.

Insights and Lessons Learned From CDS Connect Pilots, Chris Moesel (MITRE)

Chris Moesel provided an overview of the pilots from each year of CDS Connect, along with insights and lessons learned from all three years of CDS Connect pilot implementations. He provided specific examples within the topics of data availability, data quality, coding and representation, integration, and best practices. These are enumerated on the associated slides for the WG presentation.

    a. A WG member commented that the information provided was really fantastic and encouraged the CDS Connect team to bring this to HIMSS and other outreach opportunities.

CDS Connect Sustainability Path Project Update, Lacy Fabian (MITRE)

Lacy Fabian provided an update on the current status of the CDS Connect Sustainability Path project. She also mentioned that this is the last WG meeting for this "project year" which ends in September. Updates on the next phase of the project will be provided during the October CDS Connect WG meeting. Lacy invited the AHRQ sponsors to provide additional thoughts. Ed Lomotan mentioned that AHRQ will be working on the Sustainability Project recommendations, and also reminded the WG members that the WG will be continuing into the next phase of the project.

Lacy also reviewed an analysis of CDS Connect sustainability options gleaned through outreach efforts, along with consideration of various sustainability models. The project team's final recommendation was to pursue a public/private partnership model. Lacy displayed a slide that demonstrated the current and

future state models for CDS Connect. She then provided a list of questions and commented that the team would appreciate feedback from the WG on the questions. Due to limited time remaining in the meeting, Ed Lomotan and Lacy asked that WG members email their feedback on these and any other related topics to the CDS Connect team. The project team will send an email to WG members (along with the presentation), reminding them to send their recommendations.

Open Discussion and Closeout

Information was shared on the upcoming Annual PCCDS Learning Network Conference and Codeathon on October 21, 2019, along with links to more information and to the registration.

No one had any additional discussion, and the meeting was adjourned.