

August 29, 2019 CDS Connect Work Group Call



CDS Connect

AGENDA

3:00 – 3:05	Roll Call, Ginny Meadows (MITRE)
3:05 – 3:10	Review of the Agenda, Maria Michaels (MITRE)
3:10 – 3:40	CDS Connect Trust Framework Work Group (TFWG) Enhancements, Lacy Fabian (MITRE) <ul style="list-style-type: none"> • Share information and hear work group input on the potential enhancements based on TFWG recommendations • Share information on the MedStar CDS Connect Usability Evaluation analysis • Question and answer period
3:40– 3:50	Final b.well Pilot Update, Ginny Meadows (MITRE) <ul style="list-style-type: none"> • Share final information on pilot analytics, survey responses and lessons learned • Question and answer period
3:50 – 4:05	Insights and Lessons Learned From CDS Connect Pilots, Chris Moesel (MITRE) <ul style="list-style-type: none"> • Share information gained from the past 3 years of CDS Connect pilot implementations • Question and answer period
4:05 – 4:25	CDS Connect Sustainability Path Project Update, Lacy Fabian (MITRE) Discuss current status and future path of the CDS Connect Sustainability Project Question and answer period
4:25 – 4:30	Open Discussion and Close Out, Maria Michaels (MITRE) <ul style="list-style-type: none"> • Open discussion and announcements <ul style="list-style-type: none"> ○ Annual PCCDS Learning Network Conference and Codeathon • Concluding comments, review next steps and adjourn

- *CDS = Clinical Decision Support*
- *PCCDS = Patient-Centered Clinical Decision Support*

Trust Framework Work Group (TFWG) Enhancements

Continued Trust Framework Work Group Enhancements

- **Supports TFWG Attributes and Recommendations**

- Competency
 - Respect and dignity in providing feedback
- Feedback and Updating
 - Available feedback mechanisms
 - Bidirectional feedback
- Organizational Capacity
 - Support implementation, ongoing evaluation, feedback, etc.

- **Possible Enhancements**

- User accounts to receive automated notices about CDS artifacts
- Allowing feedback on artifacts
 - Site conduct
 - Engagement between viewer and artifact contributors
 - Email exchange, direct commenting, discussion boards
 - Impact on artifacts
 - Consider rating system
- **Do these types of enhancements achieve the overall attributes desired from the TFWG recommendations?**

Phased Implementation Approach

- **Begin with user accounts and subscription to updates before moving into feedback features**
- **Phase 1 Functional Enhancements by October 2019:**
 - Expand accounts
 - Collect user preferences for subscriptions
 - Automate subscriptions to MeSH terms, artifacts, and organizations
- **Phase 2 Functional Enhancements by December 2019:**
 - Leverage registered user accounts to add the opportunity to submit feedback
 - Consider email communication between contributors and viewers
- **Future Phases**
 - Consider public facing comment exchange (i.e., discussion board)

Process Considerations Required to Implement Feedback Features

- **What are reactions to the proposed phases and associated features?**
 - Are there alternate low, medium, and high value features to consider?
- **What are considerations for the process of implementing feedback?**
 - What can we do to facilitate buy-in from existing (and future) contributors?
 - Are there things we should consider regarding denoting who is willing to participate in the feedback feature?
 - What is a reasonable timeframe to ask contributors to respond to feedback?
 - **What if the timeframe is consistently not met?**

CDS Connect Analysis of MedStar CDS Connect Authoring Tool and Artifact Usability Evaluation

Objective of Analysis

- **Identify MedStar recommendations that may align with the Trust Framework Work Group (TFWG) recommendations**
 - Recognize opportunities for streamlined implementation of repository enhancements
 - Support strategic prioritization of enhancements that may further support future sustainability

Observations

- **Observations**

- Approximately 70 repository related recommendations
- Highly specific, relative to TFWG recommendations; however, still align with general themes promoting:
 - **Clarity**
 - **Trust**
 - **Usability**
 - **Discovery**
- Some recommendations have already been completed as part of prior repository enhancements
- Some recommendations can inform previously discussed enhancement plans for sign-in

Potential Next Steps

- **Potential Next Steps**

- Expand on initial analysis to prioritize MedStar recommendations into implementation buckets
 - **Redesigning the artifact page**
 - **Revising instructions to contributors**
 - **Functional change to repository**
- Incorporate initial analysis and prioritization into the next phase of CDS Connect

- **Other thoughts?**

b.well Pilot Update

Pilot Activities and Status

- **Pilot started on June 17, and has officially ended, as of August 9, 2019.**
 - Many thanks to our pilot partner, b.well!
- **Completed since June's WG presentation:**
 - ✓ Final Analytics Reports
 - ✓ User survey developed and distributed to nine b.well users
 - ✓ b.well pilot report with quantitative and qualitative results from the above

Analytics Reports

- **Total size of population (3,114)**
- **Final number of unique users meeting the CDS criteria:**

RECOMMENDATION	CDS COUNT
Glucose Part 1, Screening	462
Glucose Part 2, Counseling	105
Healthful Diet and Physical Activity for CVD Prevention	397
Statin Use for the Primary Prevention CVD	11

- **Number of notifications sent and user response rates**
 - **Overall Open Rate: 24.52% (compared to 16.7% industry average)**
 - **Overall Click Rate: 6.34% (compared to 2.1% industry average)**

Analytics Reports

Number of educational and action challenges complete

Recommendation	Challenge	Total Users	Total User Completed	% Completed
Glucose Part 1, Screening	Get Screened for Diabetes	461	88	19%
Glucose Part 1, Screening	Schedule that Screening!	461	69	15%
Glucose Part 2, Counseling	Take Steps to Prevent Diabetes!	101	23	23%
Glucose Part 2, Counseling	You Can Lower Your Risk for Diabetes!	102	28	27%
Glucose Part 2, Counseling	Schedule that Appointment Today!	101	16	16%
Healthful Diet and Physical Activity for CVD Prevention	Give Your Heart Some Love	377	94	25%
Healthful Diet and Physical Activity for CVD Prevention	A Heart-Healthy Plate	377	91	24%
Healthful Diet and Physical Activity for CVD Prevention	Strong Body, Strong Heart	376	92	24%
Healthful Diet and Physical Activity for CVD Prevention	Take Action to Protect Your Heart	376	75	20%
Statin Use for the Primary Prevention CVD	Let's Talk about Statins and You	11	0	0%
Statin Use for the Primary Prevention CVD	Schedule That Appointment To Talk About Statins And You!	11	0	0%

User Survey Results

Survey provided to 9 random end users identified as having met one or more challenge

- More than 65% thought the recommendation was relevant
- Although 86% reported the information was not new to them, more than 70% planned to take action
- More than 70% found the information provided was easy to understand
- More than 55% thought it would help improve their health

Questions

Think about the health recommendation you received. Did you feel the information was relevant to you and your current health?

- I don't remember receiving this
- Strongly agree
- Somewhat agree
- Neither disagree or agree
- Somewhat disagree
- Strongly disagree

Please explain why you feel that way. Please select all that apply.

- This is an area I already know I need to work on
- I appreciated learning I need to work on this
- I do not agree this is something I need to do
- The information did not give me tips I can use
- I have not heard this information from my healthcare team
- The information gave me tips I can use
- This is something I'd like to talk about with my healthcare team
- Other

The health information was based on the preventive care recommendations developed by the United States Preventive Services

Task Force to help people stay healthy. Was the health information new to you, or had you heard this before?

- New
- Heard it before

Where did you hear about this health information previously? Please select all that apply.

- My healthcare team
- My insurance plan
- Another website
- A magazine
- b.well
- Other

The educational information was easy to understand.

- Strongly agree
- Somewhat agree
- Neither disagree or agree
- Somewhat disagree
- Strongly disagree

Pilot Lessons Learned

- **Aggregating data from multiple sources presents great opportunities while introducing challenges**
 - Pilot data originated from claims, EHRs, PBMs, reference labs, as well as patient-generated (e.g., wearable devices, surveys and questionnaires, mobile apps)
 - Data aggregation provided greater potential for extensive individual data, but also introduced gaps in completeness and specificity
- **Data mapping is resource intensive and impacts implementation timeline**
 - Extensive mapping was needed to account for the above, resulting in an estimate of about 80 hours (nearly 25%) of engineering resource time, and another 20 hours for clinical and data analytics expertise
 - Broader adoption of standard terminologies and the FHIR data model would support increased interoperability and data aggregation

Pilot Lessons Learned

- **Integration and pilot FHIR support**

- Limited pilot technical team experience with evolving standards such as CQL, CDS Hooks, and FHIR increases integration effort and time

- **Patient/end-user engagement**

- The pilot benefited from b.well's experience and expertise in providing consumer-facing health management resources and tools
- Additional time to engage end users as well as incorporate additional personalization would have benefited the pilot

Insights and Lessons Learned From CDS Connect Pilots

Insights and Lessons Learned: Data Availability

- **Many vendors focus implementation on *Argonaut Data Query*, leaving out:**
 - Assessments (or any Observations other than lab, vitals, and smoking status)
 - Encounters
 - ProcedureRequests
 - ReferralRequests
- **Primary Care EHRs have limited access to externally sourced data, such as:**
 - Procedures
 - Non-pharmacologic treatments
 - End-of-life care
- **Prescription Drug Monitoring Program (PDMP) access is *complicated***
- **Claims data may lag behind by three or more months**

Insights and Lessons Learned: Data Quality

- **Clinical data is often missing important status information**
 - e.g., Condition.clinicalStatus, Condition.verificationStatus
- **Dates may be missing, mislabeled, or misleading**
 - Labs: ordered / drawn / result / issued → often only *issued* is available
 - Conditions: onset vs. asserted → often asserted is represented as onset
- **Many labs are still not reporting LOINC codes**
 - Variability of test names and specificity of LOINC codes make mapping difficult
- **Quantitative labs and assessments don't have structured "interpretation"**
 - Adding interpretation after the fact introduces IP concerns
- **Local variation in reference ranges**
 - OCHIN used 5-point scale on FACES assessment (usually 10-point)
- **Many claims are reported with ICD-10 codes sans decimal point**
 - e.g., E11329 vs. E11.329

Insights and Lessons Learned: Coding & Representation

- **Mapping local codes to standardized codes is necessary and *hard!***
- **Licensing concerns restrict the ability to specify logic w/ CPT codes**
 - Implementors must map CPT to more “open” terminologies
- **Some concepts still do not have standardized codes**
 - Expressed permission from IP owner required to register concepts w/ LOINC
- **Concepts often have multiple possible representations**
 - e.g., pregnancy (Condition / Observation), dialysis (Procedure / Condition)
- **Medication data may contain semantic branded drug (SBD) codes**
 - CMS Blueprint recommends that eCQM value sets only include semantic clinical drugs (SCD) codes
- **Pharmacy data is often coded with NDC rather than RxNorm**

Insights and Lessons Learned: Integration

- **External standards-based CDS may produce inefficient FHIR queries**
 - CDS engine generally submitted overly broad queries and filtered client-side
- **EHR implementations may behave in unexpected ways**
 - Unfiltered medication queries return only *active* medications in Epic
- **EHR integrations have limited UI capabilities *sans* SMART-on-FHIR**
 - Statin Use UI w/ AllianceChicago's GE Centricity was *necessarily* simple
 - SMART-on-FHIR app w/ OCHIN's Epic afforded full control of UI
- **Standards-based triggers are difficult to implement *sans* CDS Hooks**
 - OCHIN forced to include CDS "launch" button for *all* patients during pilot
- **Ability to debug onsite is hampered by NDA, PHI, and PII concerns**
 - As a result, debugging process is inefficient

Insights and Lessons Learned: Best Practices

- **Test CDS logic throughout development**
 - Bugs are less costly to fix during development than during integration
 - Exposes limitations, missed edge cases, and miscommunications early
- **CDS logic and value sets should be as inclusive as possible**
 - CDS will encounter broad variations in data across (and within) sites
- **Leverage existing logic and value sets where possible**
 - Implementations may already be tuned to support eCQM logic & value sets
- **Provide integrators w/ detailed documentation and supplemental resources**
 - Examples and executable test cases are *high-value* to integrators
- **Provide frequent touchpoints w/ CDS users during CDS pilots**
 - CDS is most effective when its users provide input and understand its use and value
- **Pilot your CDS!**
 - Pilot implementations enhance specification and effectiveness of CDS artifacts

CDS Connect Sustainability Path Project Update

Objective

- **Strategize on CDS Connect's Sustainment**
 - Update on CDS Connect Sustainability Path Project activities
 - Sustainability Strategy Session
 - *Updates on next phase will be provided to the workgroup in October*

CDS Connect Sustainability Path Project Activities

CDS Connect Sustainability Path project (September 2018- September 2019)

▪ **Current progress and next steps**

- Analysis of CDS Connect sustainability options
 - Information gathering (outreach discussions and research)
 - Consideration of various models such as private, public, and public/private partnership model
- **Recommending a public/private partnership model**

Sustainability Strategy Session

Possible CDS Community Resources

Integrate into use case

Systems Components

eCQM integration

Innovation **C**

Patient-Centered Clinical Decision Support (PCCDS)

Analytic Framework for Action (AFA) to improve Healthcare Delivery and Outcomes

Systems Components

Data warehouse integration
Guideline integration

Trust **A C**

Content Management

Evidence of use

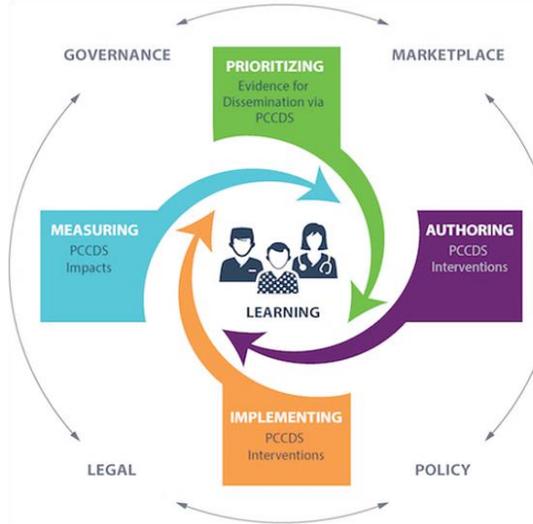
Development

Expanded workgroup expertise

Current State



Public/Private Partnership Model



Systems Ownership

Prioritize Repository

Continuous Improvement **B**

Content Management

Evidence certification & Artifact lifecycle

Functional Requirements

Interoperability

Systems Ownership

Phased transition, but ultimately housed by central entity

Practice **C**

Service **A D**

Systems Processes

Scaling up

Outreach

Primary use cases (EBP centers; HIE systems)
Services (technical, clinical, selection of artifacts)

Sustainability Strategy Session (cont.)

- What would organizations want to know about becoming a partner in a PPP model to sustain CDS Connect?
- How could we support you in engaging in a meaningful way throughout a next phase and in a PPP model going forward?
- What assumptions might organizations have about what a PPP entails or means for CDS Connect?
- From your perspective, what are concerns or risks with moving to a PPP model?
- What lessons learned can you share from other experiences that are relevant for us to consider as we plan a way forward?
- Are there upcoming events (e.g., like the upcoming AMIA event in November) that may critically inform sustainability plans, including gaining a better understanding of current and future trends in CDS?

Announcements, Open Discussion and Close-out

2019 Annual PCCDS Conference

Washington, DC | October 21, 2019

Optimizing Health through Patient-Facing Clinical Decision Support



Patient-Centered
Clinical Decision Support
Learning Network

More information: <https://pccds-ln.org/annual-conference>

New this year:

- Codeathon - https://pccds-ln.org/sites/default/files/2019-08/11148_PCCDS-19-Connectathon-8-12-19.pdf
- Papers from community- deadline extended until September 5th - <https://pccds-ln.org/sites/default/files/2019-08/11148-presentation-tearsheet-2019-8-23-19.pdf>

Keynote Speakers:

- Sarah Krüg from Cancer 101
- Dr. Edward (Ted) Melnick from Yale

Invited Panel:

- Clifford Goldsmith, MD
- Maria Michaels, MBA, PMP
- Kristen Miller, DrPH, CPPS
- **Registration-** <https://www.eventbrite.com/e/2019-annual-patient-centered-clinical-decision-support-learning-network-conference-and-connectathon-registration-61649816260>

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