2020-04-15 SDOH-CC Connectathon Participant Meeting

https://confluence.hl7.org/display/GRAV/Gravity+SDOH+FHIR+Connectathon+Participant+Meetings
Antitrust Policy

ANSI Antitrust Policy

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Approved by the ANSI Board of Directors (May 22, 2014)
Agenda 2020-04-15

• Roll call – Organization Name; PMEHR, ScreeningApp/Pt.App, Clin Data R/R, (or Pt.App User, or Auditor/Documentarian)

• Review Use Case 1 Scenes 1&2&3
  ▪ Connectathon Testing supported by Aegis
  ▪ Security Considerations - OAuth 2.0
  ▪ Human Actors: Patient Role, Auditor/Documentarian
Review
Gravity Project

- The Gravity Project creates and maintains a consensus-building community to expand interoperable social determinants of health (SDOH) data exchange by using HL7® FHIR®.

- Collaboratively develop recommendations for how best to capture information for interoperable electronic health information exchange about clinical activities related to three SDOH domains:
  - food insecurity,
  - housing instability and homelessness, and
  - transportation access.
Gravity Project Use Cases

Use Case 1: Document SDOH Data in Conjunction with the Patient Encounter

Use Case 2: Document and Track SDOH Related Interventions to Completion

Use Case 3*: Gather and Aggregate SDOH Data for Uses Beyond the Point of Care

*Out of scope for 2020 cycle
Overview of Connectathon Schedule

- **2020-05-13 to 15** Gravity SDOH FHIR Connectathon 24
- **2020-05-28 & 29** MiHIN InterOpathon 2020-09-15
- **Gravity SDOH FHIR Connectathon 25** Baltimore, MD

Assumption: Participants are committed Gravity Project community participants
Roles for Use Case 1: Actor Capabilities

This use case is relevant to how coded SDOH data are captured in a health care system and how data are shared with other systems. SDOH data are documented either as part of screening or assessment/diagnosis activities and may be the reason for ordering care activities. Client system initiates the transaction. Server system receives and responds to the transaction. FHIR workflow support (Task Resource) and $process-message operation support is required.

Messages/Transactions:
- Initiate Screening Task
- Return Screen
- Update Screening Task
- Communication Request
- Communication Response

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Roles for Use Case 1

Gravity Project Use Case 1 “Quick Tips”

SDOH-CC Community Review CI Build V0.0.3
**Use Case 1 Sequence Diagram**

Scene 0

- **Start Task**
- **Start sub-Task**
- **Gather Pt consent**
- **Pre-pop questionnaire Resp**
- **Render questionnaire w/ pre-pop info**
- **Receive submitted response**
- **Compute derived interpretations**
- **Post QR cond ref (O, Pt) to EHR**
- **Update sub-Task**
- **Update/Attach to Pt Chart**

Scene 1

- **Send link to launch app**
- **Launch form filler app**
- **All subtasks done Or time over**

Scene 2

- **Perform Pt Encounter**
- **Update Plan**
- **Initiate Referral**

Scene 3

- **A. Create CarePlan Resource**
- **B. Create CarePlan Document**
- **C. Create Encounter Summary Document**

**Structured documents can be supplied as C-CDA on FHIR or C-CDA Documents.**

**See Use Case 2**

**RESTful Query**

**RESTful Option**

**Solicited Communication**

**Solicited Response/Unsolicited Communication**

**Request Pattern**
Use Case 1: Connectathon Track

• Three “scenes”:
  • Scene 0: PMEHR/Form Creator, create (screening tool, pt. list)
  • Scene 1: PMEHR, Screening App Interaction
  • Scene 2: PMEHR documenting SDOH info during an encounter
  • Scene 3: Clin Data R/R, PMEHR Interaction

• **Connecathon 24 Track Page**

• Use Case 1 ➔ Scenario 1
  • Scene 1 ➔ Steps 1,2,&3
  • Scene 2 ➔ Step 4
  • Scene 3 ➔ Steps 5 & 6
Use Case 1:

1. **Initiate Screening Task**
2. **Return Screen**
   - 2.1 Consent provided by patient
   - 2.2 Consent not provided by patient
3. **Update Screening Task**

**XML and JSON samples of technical system roles and information exchanges**

**Scene 0: Create the Screening Instrument**

**Scene 1**
1. Initiate Screening Task
2. Return Screen
   - 2.1 Consent provided by patient
   - 2.2 Consent not provided by patient
3. Update Screening Task

**Scene 2: The Visit**
4. Communication Request
   - 4.1 CDA document request
   - 4.2 FHIR composition resource request
   - 4.3 FHIR Screening questionnaire request

**Scene 3**
5. Communication Response
   - 5.1 CDA document response
   - 5.2 FHIR composition resource response
   - 5.3 FHIR Screening questionnaire response
Use Case #1

Scene 1: Gather Screening information (precondition Scene 0)
PMEHR (grouped with SDC: Form Creator), Screening App Interaction

Connectathon Track Steps 1, 2, and 3
FHIR Workflow Execution and Request Patterns (Maturity Level 2)

- [http://hl7.org/FHIR/workflow.html](http://hl7.org/FHIR/workflow.html)
- [http://hl7.org/FHIR/workflow-communications.html](http://hl7.org/FHIR/workflow-communications.html)
- Message Bundle (Bundle.type = “message”)
  - MessageHeader
    - Task
      - [X]Request
- Use Case #1 - Gather SDOH info in clinical encounter
  - CommunicationRequest Patterns (CDex v0.1.0 FHIR IG)
- Use Case #2 – Track Referrals to completion
  - ServiceRequest Patterns (BSeR FHIR IG)

[http://build.fhir.org/ig/HL7/sdoh-cc/#how-to-use-this-guide](http://build.fhir.org/ig/HL7/sdoh-cc/#how-to-use-this-guide)
Use Case #1

Scene 2: The Visit
PMEHR

New Connectathon Track Step 4
Food Insecurity Data Concepts

Screening

- Food Insecurity
- Mild Food Insecurity, Moderate Food Insecurity, Severe Food Insecurity

Assessment Observation

- Food Insecurity Present or Absent

Diagnosis

- Food Insecurity
- Mild Food Insecurity, Moderate Food Insecurity, Severe Food Insecurity

Goal Setting

- Food Insecurity intervened

Intervention

- Counseling about nutrition (procedure)
- Meals on wheels provision education (procedure)
- Evaluation of eligibility for home delivered

Clinical Finding:

- Food Insecurity
- Mild Food Insecurity, Moderate Food Insecurity, Severe Food Insecurity

Screening Interpretation:

- Food Insecurity (At Risk, Not at Risk)

Question: Within the past 12 months we worried whether our food would run out before we got money to buy more [U.S. FSS]?
Answer: Often true, Sometimes true, Never true, Don’t Know/Refused

Food Security Present

https://confluence.hl7.org/display/GRAV/Food+Insecurity+Domain
Food Insecurity Definition (December 3, 2019)

Working definition
“Uncertain, limited, or unstable access to food that is: adequate in quantity and in nutritional quality; culturally acceptable; safe and acquired in socially acceptable ways”

Food Security
- High food security
- Marginal food security
- Low food security
- Very low food security

Food Insecurity - effect on quality, variety, quantity
- Absent
- Mild
- Moderate
- Severe

(Gregory & Coleman-Jensen, 2017)

Goal. Description

Goal. Target Measure

Goal. Achievement Status

Comparing “next” Food Insecurity Assessment Observation with “previous” Food Insecurity Assessment Observation

Improving, Worsening, No-change, Achieved

(HL7 International)
Enriching the Amount and Type of Patient-Centered Information Available for Sharing Across the Healthcare Ecosystem

<table>
<thead>
<tr>
<th>Encounter Summary**</th>
<th>Referral Note***</th>
<th>SDOH Data Elements</th>
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<td>Encounters Section</td>
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** Progress Note, H&P Document, Consultation Note, Discharge Summary

***Referral Note

++ Do we need an Assessment Section?
Do we need Health Insurance Section?
Enriching the Amount and Type of Patient-Centered Information Available for Sharing Across the Healthcare Ecosystem

**Patient Summary***
- Header
- Health Concerns
- Problem Section
- Nutrition
- Social History
- General Status
- Goals
- Procedures
- Plan of Treatment
- Encounters Section

**SDOH Data Elements**
- Risks & Health Concerns
  - Conditions of focus the specified range of time
- Screenings and Interpretation Observations
- Assessment Observations++
- Patient Centered Goals
- Interventions (completed)
- Interventions (planned)
- Service Requests (requested, completed)
- Encounter Diagnoses for Encounters that occurred during the specified range of time ++
++ Do we need Health Insurance Section?

* Continuity of Care Document
Incremental Approach to FHIR IG Development

Care Plan

- Header
- Health Concerns
- Goals
- Interventions
- Health Status Evaluations & Outcomes

SDOH Data Elements

- Risks & Health Concerns
  - Conditions
- Patient Centered Goals
- Interventions (completed)
- Interventions (planned)
- Service Requests (requested, completed)
- Screenings
  - Assessment Observations
Use Case 1

Scene 3
Clin Data R/R, PMEHR Interaction

Connectathon Track Steps 5 & 6
Use Case 1:

1. Initiate Screening Task
2. Return Screen
   2.1 Consent provided by patient
   2.2 Consent not provided by patient
3. Update Screening Task

Scene 0: Create the Screening Instrument

1. Task with SDOH Questionnaire and Patient List

Scene 2: The Visit

2. Populated Questionnaire Response with consent information
3. Completed Task

Scene 3

3. Communication Request
   4.1 CDA document request
   4.2 FHIR composition resource request
   4.3 FHIR Screening questionnaire request
4. Communication Response
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   5.2 FHIR composition resource response
   5.3 FHIR Screening questionnaire response

XML and Json samples of technical system roles and information exchanges
Use of CDex Solicited Communication

- **Da Vinci CDex IG**
- Communication Request for C-CDA Documents
- Communication Request for C-CDA on FHIR Documents
- Request for data as FHIR Resources

- **Sample Transactions on Confluence**

- **Additional Connectathon Examples** (from CDex)
Scenario 1 Scene 2 Step 4 “The Request”

- Hunger Vital Sign Screening Result Only
  - Use the **Data Request** on resource type Observation

- Hunger Vital Sign Screening Answers & Result
  - Use the **Data Request** on resource type Observation with included QuestionnaireResponse

- Complete Hunger Vital Sign Screening
  - Use the **Data Request** on resource type Composition
    - Includes all the relevant Resources: Consent, QuestionnaireResponse, Result Observation

- Encounter Summary Progress Note C-CDA Document
  - Use the **Document Request**.
    - Progress Document type is (LOINC: 11506-3 : Progress Note)
Actor Roles

Transaction Initiators and Responders
Roles for Use Case 1: Actor Capabilities

This use case is relevant to how coded SDOH data are captured in a health care system and how data are shared with other systems. SDOH data are documented either as part of screening or assessment/diagnosis activities and may be the reason for ordering care activities. Client system initiates the transaction. Server system receives and responds to the transaction. FHIR workflow support (Task Resource) and $process-message operation support is required.

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Practice Management/EHR (PMEHR) - gathers and shares SDOH information in a clinical care setting. (Grouped with SDC:Form Creator/SDC:Form Manager)

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<th>Capability</th>
<th>FHIR API resources and operations</th>
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<tr>
<td>Initiate a screening task for a list of patients and a specific screening tool to be used [1]. Receive individual patient consent and screening information as it becomes available [2]. Associate received information with the patient’s chart. Receive a confirmation when a screening task has been completed [3].</td>
<td>[base]/$process-message Bundle MessageHeader, Task List, US Core Patient SDC Questionnaire SDC QuestionnaireResponse, Observation</td>
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Enable review of received screening information associated with a patient’s medical record. Enable the clinician to document an SDOH clinical finding. Permit clinicians to document an SDOH issue as a health concern or condition to be tracked on the patient’s problem list. Include a structured SDOH goal in the patient’s documentation to facilitate outcome tracking. Document planned or completed activities to address SDOH needs using structured data.

| | |
| SDOHCC_Observation_FoodInsecurity_1 |
| SDOHCC_Condition_FoodInsecurity_1 |
| SDOHCC_Goal_FoodInsecurity_1 |
| SDOHCC_Procedure_FoodInsecurity_1 |

Receive a communication requesting SDOH information gathered during a patient encounter [4].

**Responder**

Share requested SDOH information as structured data or using a standard visit summary [5].

**Initiator**

| | |
| CDex CommunicationRequest |

CDex Communication

[C-CDA on FHIR Composition $document]

Or **C-CDA document**
**Screening App Actor** - receives and executes the screening task by interacting with the patient and the PMEHR.

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<td>Upon receiving request [1], initiate the requested screening task for the list of patients, using the supplied questionnaire. Interface with the user to gather the needed data sharing consent and collect the screening responses and compute the screening interpretation.</td>
<td>Task, List, US Core Patient SDC Questionnaire</td>
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<td>Return the consent and screening information to the screening task initiator [2]. If the patient does not consent to share screening information, return SDOH screening indicating patient preference not to participate [2.1].</td>
<td>Consent, SDC QuestionnaireResponse Observation</td>
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<td>Update the task initiator when the task is completed [3].</td>
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End of Review
Aegis Presentation

Connectathon Testing

Carie Hammond
Getting Started with Touchstone
Welcome Gravity Project
Security Considerations

SMART ON FHIR Application Launch Framework (v1.0.0)
FHIR R4

http://www.hl7.org/fhir/smart-app-launch/
Security Assumptions & Connectathon Testing

- Open connections are utilized for initial Connectathon testing.

- Optionally, System-level OAuth 2.0 authentication (grant_type: client_credentials) is tested for production use.

- Connectathon Testing and Testing Scripts available from Aegis
SMART on FHIR Application Launch
Authentication/Authorization Conformance

• 3rd Party Client Apps connect to source Data Servers from inside or outside of the server’s system
  • Confidential App Profile, Public App Profile
• App Registration
• Secure Authorization OAuth 2.0 Launch Protocol
  1. Patients apps that launch standalone
  2. Patient apps that launch from a portal
  3. Provider apps that launch standalone
  4. Provider apps that launch from a portal
• Authorization sequence and resource retrieval

http://www.hl7.org/fhir/smart-app-launch/
Human Participants

Option 1: Patient
Option 2: Auditor/Documentarian
Other “Human Participants”

**Patient**

- Patient: Use Case 1 Scene 1 - Consent to share your SDOH questionnaire information (or not), complete and submit your questionnaire response
- Patient: Use Case 1 Scene 2 – Be seen at a clinical encounter where your screening response will be considered during the visit
- Patient: Use Case 1 Scene 3 – Request your visit summary, receive and review it

**Auditor/Documentarian**

- Review progress across multiple scenes of use case
- Capture evidence of accomplishment, document observations
Important Links and Planning Information

- [Main Gravity Confluence Space](#)
- [Gravity FHIR IG Development](#)
- [Sign up for Connectation Participation](#)
- [Community Review SDOH-CC CI Build V0.0.3](#)
  - [V0.0.4 TBD April 30, 2020](#)
- [Gravity Project Use Case 1 “Quick Tips” One-Pager](#)
- [Use Case 1 “Track” Plan](#)
Gravity SDOH FHIR Connectathon Participant Meetings Schedule

Wednesdays at 3:00pm ET

https://global.gotomeeting.com/join/454082317

United States (Toll Free): 1 877 309 2073
- One-touch: tel:+18773092073,,454082317#

Access Code: 454-082-317

- Feb 26 – Connectathon participation overview
- March 4 – PMEHR interactions with Screening App
- March 25 – PMEHR documenting SDOH information in a clinical care encounter
- April 1 – Clinical Data R/R interactions with PMEHR
- April 15 – Review of OAuth 2.0 implementation considerations; Options for the “patient participant” role; Aegis Touch Stone demo and CDex Test Script use
- April 29 – Participation Logistics-what to expect, Final Questions

All sessions are recorded.
Next Steps Checklist 2020-04-15

• Determine the actor role(s) for systems, or human role(s) for yourself
  • Visit the Gravity Connectathon 24 Track
• Express your interest to participate in Gravity Project Connectathon Testing
• Get Signed up for Connectathon
• Get Register for Aegis Testing if your system will be doing Scene 3
• Plan to attend the April 29th Connectathon Planning Session

Wednesdays at 3:00pm ET
https://global.gotomeeting.com/join/454082317

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