Gravity Project Overview: HIMSS MI

October 3, 2019
Lisa Nelson, MS, MBA, Gravity Technical Lead
MaxMD
Agenda

- Gravity Introductions
- Background
- Scope
- Approach
- Deliverables
Gravity Project Mission

To create and maintain a consensus-building community to expand available SDOH Core Data for Interoperability and accelerate standards-based information exchange by using HL7 FHIR.

Create & Maintain Consensus-building Community

Expand Core Data for Interoperability to include SDOH elements

Accelerate Standards-based Info Exchange
Gravity Project Team

- Laura Gottlieb, Director, SIREN
- Caroline Fichtenberg, Managing Director, SIREN
- Evelyn Gallego, Program Manager, EMI Advisors
- Lynette Elliott, Project Manager, EMI Advisors
- Lisa Nelson, Technical Lead, MaxMD
- Linda Hyde, Coding Systems Expert, EMI Advisors
- Sarah DeSilvey, Food Insecurity Co-Lead, University of Vermont/ Yale School of Nursing
- Donna G. Pertel, Food Insecurity Co-Lead, Academy of Nutrition and Dietetics
- Monique Van Berkum, FHIR Modeling Lead, AMA
- Corey Smith, FHIR IG Project Coordination, AMA
Gravity Project Stakeholder Community
Gravity Participation To-Date: 714 Participants!

- Not Registered, 238, 33%
- Committed Member, 183, 26%
- Other Interested Party, 293, 41%
Background (WHY)
Growing Interest in Addressing SDOH in Clinical Settings

Insurance Companies and Healthcare Providers Are Investing Millions in Social Determinants of Health Programs

Jul 24, 2019 | Laboratory Management and Operations, Laboratory News, Laboratory Operations, Laboratory Pathology

When patients’ social needs are met, doctors feel less burnout

AUGUST 1, 2019

CVS-Aetna is partnering with a New York-based social care platform to bring social services to high-risk members

Zachary Hendrickson Jul 25, 2019, 10:42 AM

Medicaid Beneficiaries Do Much Better When Plans Address Their Social Determinants of Health

July 25, 2019

Solera Health, Blue Cross Blue Shield Institute team up on social determinants of health initiative

The two companies will work together to tailor a platform that will connect patients to community-based providers and other resources.

AMA, UnitedHealthcare Develop ICD-10 Codes to Support Social Determinants of Health

by Fred Flores 2/22/19

Best Practices to Develop a Social Determinants of Health Strategy

A discussion with members of Humana’s Bold Goal team identified best practices for building a successful social determinants of health strategy.
What Goes Into Your Health?

- **Socioeconomic Factors**
  - Education
  - Job Status
  - Family/Social Support
  - Income
  - Community Safety

- **Physical Environment**

- **Health Behaviors**
  - Tobacco Use
  - Diet & Exercise
  - Alcohol Use
  - Sexual Activity

- **Health Care**
  - Access to Care
  - Quality of Care

Source: Institute for Clinical Systems Improvement, Going Beyond Clinical Walls: Solving Complex Problems (October 2014)

Adapted from The Bridgespan Group
Uses for Social Risk Data in Clinical Settings

- Medical Care
- Social Risk Interventions
- Population Health Management
- Risk Adjustment
- Community Health Improvement
- Research
What if the information about SDOH was hidden from our documentation, our referrals, our orders, our risk analysis, and our research?
If it isn’t documented, it never happened.
If it isn’t documented, it never happened.
Why capture social risk data in a standardized and structured way?

1. To promote collection and use of the data
2. To facilitate sharing of the data across organizations
3. To facilitate payment for social risk intervention activities and support other activities that rely on standardized coded data collection
What Codes Exist to Capture Social Risk Data?
SIREN Social Risk Codes Review

- IOM
- AHC
- PRAPARE
- Health Leads
- SEEK
- WE CARE

20 Social Risk Domains

### SIREN Social Risk Codes Review

<table>
<thead>
<tr>
<th>#</th>
<th>Code Type</th>
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<tbody>
<tr>
<td>133</td>
<td>Screening question panel codes</td>
</tr>
<tr>
<td>33</td>
<td>Screening procedure codes</td>
</tr>
<tr>
<td>686</td>
<td>Assessment/Diagnosis codes</td>
</tr>
<tr>
<td>243</td>
<td>Treatment/Intervention codes</td>
</tr>
<tr>
<td>1095</td>
<td>SDH Codes</td>
</tr>
</tbody>
</table>

Gravity Project Goals

- What concepts need to be documented?
- What codes reflecting these concepts are currently available?
- What codes are missing?
Project Scope (WHAT)
GOAL: **data-level interoperability** by enabling electronic documentation and exchange of SDOH data among all relevant users of data.
Gravity Project Deliverables (Phase 1)

- Use Cases
- Common data elements and associated concept domains
- Coded data element capture and grouping recommendations (informed by existing standards)
Interoperability Glide Path: Beyond Phase 1

Accelerate standards development and uptake

SDoH Data Sets
- Food Insecurity
- Housing Instability & Quality
- Transportation Access

Develop and test coded value sets for use in FHIR
- Refine, test, and ballot HL7® FHIR® SDH Implementation Guide

Phase 1 (2019)

Phase 2 (2020 +)

http://www.hl7.org/about/fhir-accelerator/
Project Approach (HOW)
Public Collaborative Process

https://confluence.hl7.org/display/GRAV/The+Gravity+Project
Governance Structure: Advisory Steering Committee

https://confluence.hl7.org/pages/viewpage.action?pageId=46891907#TheGravityProject-GravityProjectSteeringCommittee
<table>
<thead>
<tr>
<th>Task 1: Collaborative Launch</th>
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<tbody>
<tr>
<td>Project Charter Introduction and Coding Concept Orientation</td>
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<table>
<thead>
<tr>
<th>Task 2: Use Case Development &amp; Functional Requirements</th>
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<tr>
<td>Use Case Development &amp; Consensus (HL7 Cross-Paradigm Storyboard)</td>
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<tr>
<th>Task 3: Data Set Identification By Domain</th>
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<tr>
<td>Food Insecurity Data Set Identification</td>
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<tr>
<td>Housing Instability &amp; Quality Data Set Identification</td>
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<tr>
<td>Transportation Access Data Set Identification</td>
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</tbody>
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<tr>
<th>Task 4: Coding Recommendations</th>
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<tbody>
<tr>
<td>Terminology &amp; Code Harmonization Report Development</td>
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<tr>
<th>Task 5: HL7 FHIR Integration</th>
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<tr>
<td>HL7 FHIR SDOH Implementation Guide Development</td>
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</tbody>
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**Kick-Off May 2, 2019**
Project Approach

• Develop Use Cases
  ▪ Personas
  ▪ Patient Story
  ▪ Use Cases

• Develop Data Sets & “proposed” Value Sets
  ▪ Data Sets are groupings of concept data elements
  ▪ A value set is the possible values or responses for a data element

• Identify Coding Gaps & Develop Recommendations

• Initiate HL7 FHIR Implementation Guide

Please see Gravity Glossary for definitions of these terms:
https://confluence.hl7.org/display/PC/Gravity+Project+Glossary
Project Deliverables To-Date
Use Case Key Components

- **Personas (the WHO):** Fictional characters who represent a person expected to use a service or product. Also referred to as the human actors within a use case.

- **Patient Story (the WHAT):** Describe the Personas engaging with the service, technology, or setting over a period of time to accomplish a specific goal.

- **Use Case(s):** Descriptions of the interactions between the personas and the systems they use.
1. Document SDOH data in conjunction with the patient encounter.

2. Document and track SDOH related interventions to completion.

3. Gather and aggregate SDOH data for uses beyond the point of care (e.g., population health management, quality reporting, and risk adjustment/risk stratification).

https://confluence.hl7.org/display/GRAV/Gravity+Use+Case+Package
Use Case Elements

▪ **Actors and Roles.** Actors may be a person, entity, or system. An Actor describes the role within a specific transaction in a series of steps in a use case. Roles indicate the relationship between the sender and receiver of the data exchange through a specific transaction.

▪ **Assumptions.** Items expected to be true or to be in place such as a policy, process, or procedure for the execution of a specific transaction.

▪ **Pre-conditions.** Refer to the initial state of the system before an action or transaction occurs. These describe what must be in place from a systems perspective to support interoperable data sharing for a specific transaction.

▪ **Trigger.** An event or system condition that causes a workflow to be initiated.

▪ **Post-conditions.** Describe the state of the system that will result after the execution of the transaction.

▪ **Transactions.** The data exchange between two systems.

▪ **Message Content or Payload.** The content or substance of what is exchanged within a specific transaction.

https://confluence.hl7.org/display GRAV/Gravity+Use+Case+Package
Use Case 1: Document SDOH During Clinical Encounter

https://confluence.hl7.org/display/GRAV/Gravity+Use+Case+Package
Use Case 1

**Screening App**

Find Pt, create Questionnaire1, Consent1
Prepop with supplied data

Administer Questionnaire and collect consent to share.

Use CR

**EHR**

CommunicationRequest
(Screen using SDOH Questionnaire1, pre-pop data)

Find Pt

Communication

Transaction Bundle using Conditional Reference to Patient

Attach QR, Csig to Pt.Record

Clinician Reviews SDOH screen, discusses with Pt.
Completes clinical encounter.

Add SDOH Assessment Obs
If Problem, add Condition
Creates Encounter Doc
Common definition “An economic and social condition of limited or uncertain access to adequate food for an active, healthy life” (United States Department of Agriculture, 2017)

Food Security

High food security  Marginal food security

Food Insecurity-effect on quality, variety, quantity

Low food security  Very low food security

(Gregory & Coleman-Jensen, 2017)

https://confluence.hl7.org/display/GRAV/Food+Insecurity+Domain
Definitions Refinement to Address Computable Logic

- **Problem** - Although conceptually sound, existing food security/insecurity definitions are 1) population based 2) not fit for computable logic

- **Answer** - literature review, national SME consensus building, refine, present to Gravity for consensus
Food Insecurity Domain Proposed  (Sept 18, 2019)

**Proposed definition** “An economic and social condition of limited or uncertain access to adequate food for an active, healthy life”  
(Proposed Gravity Definition )

Food Security

- High food security

Food Insecurity-
effect on quality, variety, quantity

- Marginal food security
- Low food security
- Very low food security

https://confluence.hl7.org/display/GRAV/Food+Insecurity+Domain
Data Element Submission & Adjudication Process

Process/Data Collection over time

Contributors recommend potential data elements

Submitted Form

Adjudicator harvests new ideas from the Current Submitted Form, making them Candidates and promotes new data elements to Master List.

Adjudication Form

Adjudicate

Adjudicator promotes adjudicated data elements from a Current Adjudicated Form. Merges/Removes data elements

Promote

Community approves recommended data elements.

Vote

Community votes to affirm or reject data elements on Master List to move them to the Consensus List.

Committed Participants

Adjudicated Master List: [https://confluence.hl7.org/display/GRAV/Food+Insecurity+Domain](https://confluence.hl7.org/display/GRAV/Food+Insecurity+Domain)
Data Element Submissions Summary

Total Submissions Received = 19

<table>
<thead>
<tr>
<th>Screening Tool/ Questions</th>
<th>Diagnosis</th>
<th>Goal</th>
<th>Intervention</th>
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<tbody>
<tr>
<td>56 Tools / 191 Questions</td>
<td>60</td>
<td>13</td>
<td>147</td>
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Submissions Reviewed = 17

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<td>Add – 9 Tools/89 Questions</td>
<td>Add – 1</td>
<td>Add – 22</td>
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<tr>
<td>Do Not Add – 16 Tools/72 Questions</td>
<td>Do Not Add – 6</td>
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<td>Do Not Add – 4</td>
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<tr>
<td><strong>Info Needed – 2 Tools/3 Questions</strong></td>
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<td></td>
<td><strong>Info Needed - 18</strong></td>
</tr>
<tr>
<td>Park - 2 Tools/ 4 Questions</td>
<td>Park - 2</td>
<td></td>
<td>Park - 2</td>
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</tbody>
</table>

Total Submissions Returned* = 8

* Adjudication completed and file returned to submitter with dispositions
Incremental Approach to FHIR IG Development

**Care Plan**
- Header
- Health Concerns
- Goals
- Interventions
- Health Status Evaluations & Outcomes

**SDOH Data Elements**
- Screenings
- Completed Interventions
- Planned Interventions
- SDOH Observations
- Outcome Observations
- Risks & Barriers
- Diagnoses
- Patient Centered Goals
Enriching the Amount and Type of Patient-Centered Information Available for Sharing Across the Healthcare Ecosystem

<table>
<thead>
<tr>
<th>Patient Summary*</th>
<th>Encounter Summary**</th>
<th>Referral Note***</th>
<th>SDOH Data Elements</th>
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<td><strong>Header</strong></td>
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</table>

* Continuity of Care Document

** Progress Note, H&P Document, Referral Summary, Consultation Note, Discharge Summary

*** Progress Note, H&P Document, Referral Summary, Consultation Note, Discharge Summary

- Risks & Barriers
- Diagnoses
- Screenings
- Clinical Assessment
- Patient Centered Goals
- Outcome Observations
- Completed Interventions
- Planned Interventions
HL7 FHIR Acceleration

• Reuse:
  • C-CDA on FHIR: Care Plan, CCD, H&P, Progress Note, Referral Note, Consultation Note
  • US Core: Patient, Practitioner, PractitionerRole, Organization, Coverage
  • Da Vinci: CDex (Clinical Data Exchange)
  • FHIR: Goal, Questionnaire, QuestionnaireResponse, Observation, Consent, Bundle(Document), Bundle(Transaction), CarePlan

• Profile:
  • Food Insecurity Observation
  • Food Security Observation
Gravity Project Roadmap (Task 5: HL7 FHIR Integration)

- **Draft SDOH Implementation Guide Development for Dec Testing**
- **IG revisions for Jan Testing**
- **IG revisions for Comment Only Ballot (May 2020)**
- **Comment Only IG Ballot Reconciliation**
- **Sept STU Ballot Reconciliation**

### FHIR IG Development
- **Connectathon UC 1 (early Dec)**
- **CMS Connectathon UC 1, 3 (Jan 20)**
- **HL7 Connectathon, San Antonio, UC 1, 3 (May 20)**
- **HL7 Connectathon, Baltimore, UC 1, 2, 3 (Sept 20)**

### Connectathon Testing

### HL7 Balloting
- **HL7 Comment Only Ballot (May 20)**
- **HL7 STU Ballot (Sept 20)**
- **HL7 STU R1 (Nov 20)**

- **FHIR Community Kick-Off Oct 31, 2019**
Questions?

Lisa Nelson: L Nelson@max.md

Contact: gravityproject@emiadvisors.net

Join the Gravity Project:
https://confluence.hl7.org/display/PC/Join+the+Gravity+Project
Antitrust Policy

ANSI Antitrust Policy

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Approved by the ANSI Board of Directors (May 22, 2014)