The Gravity Project: Birds of a Feather

September 17, 2019
Evelyn Gallego, MBA, MPH, CPHIMS
Lisa Nelson, MBA
Agenda

- Gravity Team Intro
- Project Background (the WHY)
- Project Scope (the WHAT)
- Project Approach (the HOW)
- Project Deliverables to-date
- Gravity Relevance to ACL & DEHPG
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, Value Sets 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
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
PHYSICIAN HEALTH
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

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
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 data collection and intervention activities
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>Code</th>
<th>Description</th>
</tr>
</thead>
<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>

Arons A, DeSilvey S, Fichtenberg C, Gottlieb L.  
Gravity Project Goals

- What concepts need to be documented?
- What codes reflecting these concepts are currently available?
- What codes are missing?
Project Scope (WHAT)
TARGET 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 value sets
- Coded data element capture and grouping recommendations

Food Insecurity
Housing Instability & Quality
Transportation Access
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 +)

Regulators
EHR Vendors
Payers
Patients
Clinicians
Registries/Researchers

USCDI (draft)
The Office of the National Coordinator for Health Information Technology

HL7® FHIR®
ARGONAUT PROJECT
DA VINCI PROJECT
CARIN
HSPC
CIIC
Clinical Interoperability Council

siren UCSF
Robert Wood Johnson Foundation
EMI ADVISORS
Project Approach (HOW)
Public Collaborative Process

Dashboard

The Gravity Project
Created by Laura Heermann-Langford, last modified by Joshua Procius yesterday at 9:51 AM

Announcements

Become a Gravity Project Sponsor
SIREN and EMI Advisors are currently seeking additional Gravity Project sponsors. This is an opportunity to be recognized as contributing to this project, which is receiving considerable attention. If your organization is interested in becoming a sponsor, please click on the button below to submit your contact information.

Express Interest in Sponsoring Gravity

Use Case Consensus Voting
- Thank you to everyone who voted! Consensus Voting is now CLOSED.
- We are in the process of consolidating votes and reconciling comments.

UPATED workgroup meeting schedule
- We have moved to bi-weekly project workgroup meetings. The next meeting will be held on August 1, 2019 at the regular time. Information will remain unchanged. Click here for upcoming meeting information. For the full meeting schedule, click here.
- We are currently working in the Food Insecurity domain. Click here for food-related terminology, definitions/descriptions, used to guide scope and community discussions around food data elements.
- Click here to access Gravity Project materials.

Join the Gravity Project
The success of the Gravity Project depends on the contribution of volunteers who are eager to make rapid progress on the standard. We need experts to contribute to and validate definitions for SDH related data elements and value sets. Participants are asked to join the project at any time either as a Committed Member or Other Interested Party as part of the HL7 project, sign up here.
- To check your project membership status, click here. If you wish to change your membership from Other Interested Party to Committed Member, email request to GravityProject@emiadvisors.net.
- NOTE: Both member types can submit comments on project documentation. However, only Committed Members may vote to have voting rights, please change your membership status or join the project as a Committed Member.

Overview
The Social Interventions Research and Evaluation Network (SIREN), with funding from the Robert Wood Johnson Foundation and in p...
Gravity Participation To-Date: 714 Participants!

- Not Registered, 238, 33%
- Committed Member, 183, 26%
- Other Interested Party, 293, 41%
Governance Structure: Advisory Steering Committee

https://confluence.hl7.org/pages/viewpage.action?pageId=46891907#TheGravityProject-GravityProjectSteeringCommittee
Gravity Project Roadmap (Phase 1)

May to Jun 19

Task 1: Collaborative Launch
- Project Charter Introduction and Coding Concept Orientation

Task 2: Use Case Development & Functional Requirements
- Use Case Development & Consensus (HL7 Cross-Paradigm Storyboard)

Task 3: Data Set Identification By Domain
- Food Insecurity Data Set Identification
- Housing Instability & Quality Data Set Identification
- Transportation Access Data Set Identification

Task 4: Coding Recommendations
- Terminology & Code Harmonization Report Development

Task 5: HL7 FHIR Integration
- HL7 FHIR SDH Implementation Guide Development

Kick-Off May 2, 2019
Project Deliverables To-Date
Gravity Use Cases: Incremental Build

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.

• **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 Actor-Transaction Diagram

https://confluence.hl7.org/display/GRAV/Gravity+Use+Case+Package
Use Case 2 Actor-Transaction Diagram

https://confluence.hl7.org/display/GRAV/Gravity+Use+Case+Package
Use Case 3 Actor-Transaction Diagram

PCP Practice
Information Source

SDH data gathered at encounter in standard format

Clearing House/ HISP/CIE
Information Recipient / Data Aggregator

Clearing House Specialist

Aggregated info in standard format

Payer Organization

Aggregate Information Recipient

Payer Data Warehouse, Registry/ Research System

Quality Specialist/ Health Plan Care Manager

EHR

Information Source

Initiator

Middleware

Initiator

"><p style="text-align: right;"
https://confluence.hl7.org/display/GRAV/Gravity+Use+Case+Package

https://confluence.hl7.org/display/GRAV/Gravity+Use+Case+Package
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
## Food Insecurity Data Element Submissions Snapshot

<table>
<thead>
<tr>
<th>Submitter</th>
<th>Screening Tool/ Questions</th>
<th>Diagnosis / Needs</th>
<th>Goals</th>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarah/ Donna</td>
<td>9 Tools/ 34 Questions</td>
<td>23</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>JHSPH</td>
<td>9 Tools /12 Questions</td>
<td>5</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>California Food Policy Advocates</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>MITRE</td>
<td>1 Tool /18 Questions</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Community Health Care Association of NY State</td>
<td>1 Tool /1 Question</td>
<td>3</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Evolent Health</td>
<td>1 Tool/ 1 Question</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Food Is Medicine Coalition</td>
<td>4 Tool/ 2 Questions</td>
<td>0</td>
<td>0</td>
<td>5</td>
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<tr>
<td>NYSDOH</td>
<td>3 Tool / 3 Questions</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL**                                        | **71**                     | **38**            | **9** | **87**
Intervention Concepts

- Meals on wheels provision assessment (procedure)
- Arrange meals on wheels (regime/therapy)
- Evaluated for meals on wheels
- Educated about WIC
- Provided emergency food assistance
- Counseling about nutrition using motivational interviewing strategy (procedure)
- Nutritionist education, guidance, and counseling (procedure)
How to Review Food Insecurity Adjudicated Data Submissions (Master List)

https://confluence.hl7.org/display/GRAV/Food+Insecurity+Domain

Master List with adjudicated data elements will be published on Confluence page bi-weekly (by Friday COB following a bi-weekly public call)
How Gravity Leverages Existing HL7 Standards
Gravity Use Case 1

- Uses existing Encounter Summaries, Patient Summaries, and Care Plan Documents defined to exchange information gathered during clinical care

- C-CDA Patient Summary (CCD) and Encounter Summary documents (H&P, Progress Note, Consultation Note, Discharge Summary)
  - Established Structured Sections and Re-usable Entry Templates for Discrete Data
  - Assessment Scale Observation, Health Concern, Problem Concern, Problem Observation, Goal Observation, Procedure Activity, Planned Intervention/Intervention Act, Outcome Observation

- FHIR C-CDA on FHIR
  - All the same documents/sections
  - US Core for many of the same entry templates: Questionnaire/Questionnaire Response, Observation, Condition, Goal, CarePlan
Gravity Use Case 2

- Will be executed using “close loop referral” techniques based on standards like IHE 360X to track and manage SDoH-related referrals to completion
- Re-use standards work developed for patient-centered care planning to express and exchange patient goals, preferences and priorities for care
Care Plan Relationship Diagram Expressed in Wireframe Format

C-CDA R2.0, R2.1

Figure 25: Care Plan Relationship Diagram

Table 10: actRelationship TypeCodes

<table>
<thead>
<tr>
<th>Code</th>
<th>Display Name</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP</td>
<td>Has component</td>
<td>Shows that one component has support or another, how all goal has component, component has reason (same as goal)</td>
</tr>
<tr>
<td>REFR</td>
<td>Refers to</td>
<td>Shows a relationship between components (a goal refers to a health concern)</td>
</tr>
<tr>
<td>SPRT</td>
<td>Has support</td>
<td>Show that the one component is supporting evidence for another (Health Concern has support from a problem observation)</td>
</tr>
<tr>
<td>RSON</td>
<td>Has reason</td>
<td>Show the reason or rationale for something (intervention has reason of achieving a goal)</td>
</tr>
<tr>
<td>GEVL</td>
<td>Evaluates goal</td>
<td>Used to link an observation (intervention) to a goal to indicate that the observation evaluates a goal</td>
</tr>
</tbody>
</table>
Enriching the Amount and Type of Patient-Centered Information Available for Sharing Across the Health Care Ecosystem

<table>
<thead>
<tr>
<th>Patient Summary*</th>
<th>Encounter Summary**</th>
<th>Care Plan</th>
<th>Referral Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Header</strong></td>
<td><strong>Header</strong></td>
<td><strong>Header</strong></td>
<td><strong>Header</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Evaluations &amp; Outcomes</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Health Concerns</strong></td>
<td><strong>Health Concerns</strong></td>
<td><strong>Health Concerns</strong></td>
<td><strong>Health Concerns</strong></td>
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<td><strong>Problem Section</strong></td>
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<td><strong>Problem Section</strong></td>
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<tr>
<td><strong>Goals</strong></td>
<td><strong>Goals</strong></td>
<td><strong>Goals</strong></td>
<td><strong>Goals</strong></td>
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<td><strong>Social History</strong></td>
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<td><strong>Social History</strong></td>
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<td><strong>General Status</strong></td>
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<td><strong>General Status</strong></td>
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<td><strong>Nutrition</strong></td>
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<td></td>
<td><strong>Nutrition</strong></td>
</tr>
<tr>
<td><strong>Procedures</strong></td>
<td><strong>Procedures</strong></td>
<td><strong>Interventions</strong></td>
<td><strong>Procedures</strong></td>
</tr>
<tr>
<td><strong>Plan of Treatment</strong></td>
<td><strong>Plan of Treatment</strong></td>
<td></td>
<td><strong>Plan of Treatment</strong></td>
</tr>
<tr>
<td><strong>Encounters Section</strong></td>
<td></td>
<td><strong>Evaluations &amp; Outcomes</strong></td>
<td></td>
</tr>
</tbody>
</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

SDoH

- Screening Information
- Concerns
- Diagnoses
- Patient Centered Goals
- Assessment Observations
- Interventions, Care Planning Information
- Evaluations, Outcomes
Accelerate HL7 IG Development

- Community collaboration
- Contribute non-technical IG content: Value Proposition, Use Cases, Patient Stories, Personas
- Reuse available standards/data structures
- Develop new vocabulary requirements & artifacts
- Encourage consensus building
- Support Connectathon experimentation and learning
- Formalize Implementer Guidance (ballot)
- Publish Implementer Guidance (open sharing)
- Evolve and improve incrementally (HL7 processes)
Questions?

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Lisa Nelson: lnelson@max.md

Contact: gravityproject@emiadvisors.net

Join the Gravity Project:
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