Consensus-driven Standards on Social Determinants of Health

Evelyn Gallego, CEO at EMI Advisors LLC, Senior Advisor at Gravity Project

CMS Connectathon | July 20, 2022
Agenda

• What is the Gravity Project?
• Accomplishments to date
• Success Factors for Scalability
• How to Engage
Hooray! That ear is better... Anything else...?
A Social Determinants of Health Lexicon

- **Health Equity** is “achieved when every person has the opportunity to attain his or her full health potential and no one is disadvantaged from achieving this potential because of social position or other socially determined circumstances”.

- **Social Determinants of Health**: “the conditions in which people are born, grow, live, work and age,” which are “shaped by the distribution of money, power and resources.

  - **Protective Factors**: characteristics or strengths of individuals, families, communities or societies that act to mitigate risks and promote positive well-being and healthy development.

  - **Social Risks**: Adverse social conditions associated with poor health.

  - **Social Needs**: Non-medical patient prioritized needs that impact health.

Addressing SDOH and its various key areas is an approach that can be used to improve equity and reduce disparities.

Physician-Focused Payment Model Technical Advisory Committee (2021) SDOH and Equity Report to the Secretary
Why SDOH are Important

• There is growing awareness that SDOH information improves whole person care and lowers cost. Unmet social needs negatively impact health outcomes.

• **Food insecurity** correlates to higher levels of diabetes, hypertension, and heart failure.

• **Housing instability** factors into lower treatment adherence.

• **Transportation barriers** result in missed appointments, delayed care, and lower medication compliance.

SIREN Study: Uses for Social Risk Data in Clinical Settings

- Population Health Management
- Risk Adjustment
- Social Risk Interventions
- Community Health Improvement
- Medical Care
- Research
Challenges in SDOH Data Capture and Exchange

- Standardization of SDOH Data Collection and Storage
- Data Sharing Between Ecosystem Parties
- Access & Comfort with Digital Solutions
- Concerns about Information Collection and Sharing and Duplicative Data Entry
- Social Care Sector Capacity and Capability
- Unnecessary Medicalization of SDOH
- Consent Management
- Competing State & Local Networks
- Managing Diverse Needs of Stakeholders
- Sustainable Funding Models

Gravity Project

A collaborative public-private initiative launched in May 2019 with the goal to develop consensus-driven data standards to support the collection, use, and exchange of social determinants of health (SDOH) data.
Project Scope

Develop data standards to represent and exchange patient level SDOH data documented across four clinical activities:

- Screening,
- Assessment/diagnosis,
- Goal setting, and
- Treatment/interventions.

Test and validate standardized SDOH data for use in patient care, care coordination between health and human services sectors, population health management, public health, value-based payment, and clinical research.

Domains grounded by those listed in the NASEM "Capturing Social and Behavioral Domains in Electronic Health Records" 2014
Project Execution: Three Workstreams (Terminology, Technical, Pilots)

1. Terminology (SDOH Domains)
   - Coding Gap Analysis & Recommendations
   - Data Set Identification
   - New Code Submissions

2. Technical (HL7 FHIR)
   - FHIR IG Testing
   - FHIR IG Development
   - Community & FHIR Coordination
   - FHIR IG Ballot & Publication

3. Coding Value Sets
   - CODED VALUE SETS

4. Pilots (Testing & Implementation)
   - Publication in NLM VSAC & ONC ISA
   - Publication in NLM
Public Collaboration via 2 Public Workgroups

Gravity has convened over 2,500+ participants from across the health and human services ecosystem.

Terminology Workstream Products developed via Public Collaborative.

- Meet bi-weekly on Thursdays from 4 to 5:30 pm ET.

Technical Workstream Products developed via HL7 SDOH FHIR IG WG.

- Meet weekly on Wednesdays from 3 to 4 pm ET.

# Project Founders, Grants, and In-Kind Support To-Date

<table>
<thead>
<tr>
<th>PROVIDER</th>
<th>SOCIAL SERVICES</th>
<th>PAYER</th>
<th>TECHNOLOGY VENDOR</th>
<th>GOVERNMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAFP</td>
<td>Children’s HealthWatch</td>
<td>Humana</td>
<td>CyncHealth</td>
<td>ONC</td>
</tr>
<tr>
<td>Yale School of Nursing</td>
<td>Robert Wood Johnson Foundation</td>
<td>KAISER PERMANENTE</td>
<td>newwave</td>
<td>CMS</td>
</tr>
<tr>
<td>UC SF</td>
<td>sirenSF</td>
<td>Arkansas</td>
<td>ATA</td>
<td>ACL</td>
</tr>
<tr>
<td>Lyf</td>
<td>Academy of Nutrition and Dietetics</td>
<td>AmeriHealth Caritas</td>
<td>juxly</td>
<td>INTEROPERABILITY INSTITUTE</td>
</tr>
<tr>
<td>AMA</td>
<td>eat right</td>
<td>Blue Cross BlueShield Association</td>
<td>United Health Care</td>
<td>UNITE US</td>
</tr>
<tr>
<td>CommonSpirit</td>
<td>blue california</td>
<td>UnitedHealthcare</td>
<td>HealthLX</td>
<td>AHRQ</td>
</tr>
</tbody>
</table>

[https://confluence.hl7.org/display/GRAV/Gravity+Project+Sponsors](https://confluence.hl7.org/display/GRAV/Gravity+Project+Sponsors)
Gravity Timeline

**2017**
- **SIREN Exploration**
  - November: SIREN/Academy Health Host Multi-Stakeholder Group

**2018**
- **Initiation**
  - RWJF funds SIREN to standup new coding collaborative

**2019**
- **Launch**
  - August: Gravity becomes an HL7 FHIR Accelerator Project
  - DRAFT Gravity IG build

**2020**
- **2021**
  - November: Gravity Value Sets in VSAC
  - Summer: Gravity IG STU2 Published

**2022**
- **August: Gravity IG STU1 Published**
  - Digital Inequity
  - Neighborhood Safety
  - Food Access

- **2017**
  - Medical Cost Burden
  - Health Insurance Coverage Status
  - Health Literacy

- **2018**
  - Inadequate Housing
  - Unemployment
  - Veterans
  - Education
  - Material Hardship
  - Intimate Partner Violence

- **2019**
  - Food Insecurity
  - Housing Instability
  - Homelessness
  - Transportation Insecurity

- **2020**
  - Stress
  - Social Isolation
  - Food Access
  - Financial Insecurity
  - Material Hardship
  - Inadequate Housing
  - Veterans
  - Education
  - Unemployment

- **2021**
  - Health Insurance Coverage Status
  - Health Literacy
  - Medical Cost Burden

- **2022**
  - Digital Inequity
  - Neighborhood Safety
  - Food Access
Gravity 2022 Roadmap

**Terminology**
- Health Literacy
- Health Insurance Coverage Status
- Medical Cost Burden

**Technical**
- FHIR IG STU2 Ballot
- FHIR IG STU2 Ballot Reconciliation
- FHIR IG STU2 Updates
- FHIR IG STU2 Publication
- Reference Implementation Update
- HL7 FHIR Connectathons

**Pilots**
- Terminology and Technical Pilots

**Build, Dissemination and Evaluation**
- Digital Inequity
- Neighborhood Safety
- Food Access

**Key**
- ▲ LOINC Code Release (MAR/OCT)
- ★ SNOMED Code Release (MAR/SEP)
- ◇ ICD-10 Code Release (APR/OCT)
Terminology Workstream
**Terminology Workstream Accomplishments**

Data definitions and code submissions for **17** SDOH Domains

**LOINC** screener codes available for **15** domains

**ICD-10** z-codes available for **12** domains (8 codes included in FY2023 CMS IPPS Proposed Rule)

**SNOMED-CT** Diagnoses codes available for **16** domains

**SNOMED-CT** intervention codes available for **17** domains

Published **123** value sets in National Library of Medicine (NLM)

Data class included in ONC USCDI v2

[https://confluence.hl7.org/display/GRAV/SDOH+Data+Elements+And+Status](https://confluence.hl7.org/display/GRAV/SDOH+Data+Elements+And+Status)
**Food Insecurity Terminology**

**Build**

**PROCEDURE:** Education about Child and Adult Food Program
SNOMED 464201000124103

**PROCEDURE:** Provision of food voucher
SNOMED 464411000124104

**REFERRAL:** Referral to Community Health Worker
SNOMED 464131000124100

Q. Within the past 12 months we worried whether our food would run out before we got money to buy more. LOINC 88122-7
A. Often true, Sometimes true, Never true, don’t know/refused. LOINC

**Food Insecurity Observation:** Food Insecurity
SNOMED 733423003

**Food Security,** Has adequate number of meals and snacks daily, Has adequate quality meals and snacks*
SNOMED 1078229009

# Interventions Framework

<table>
<thead>
<tr>
<th>Gravity Term</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistance/Assisting</td>
<td>To give support or aid to; help</td>
</tr>
<tr>
<td>Coaching</td>
<td>Method of instruction, direction, or promoting that can include demonstration, reinforcement, motivation and feedback to improve performance, or achieve a specified goal.</td>
</tr>
<tr>
<td>Coordination</td>
<td>Process of organizing activities and sharing information to improve effectiveness</td>
</tr>
<tr>
<td>Counseling</td>
<td>Psychosocial procedure that involves listening, reflecting, etc. to facilitate recognition of course of action/solution.</td>
</tr>
<tr>
<td>Education</td>
<td>Procedure that is synonymous with those activities such as teaching, demonstration, instruction, explanation, and advice that aim to increase knowledge and skills.</td>
</tr>
<tr>
<td>Evaluation of eligibility (for &lt;x&gt;)</td>
<td>Process of determining eligibility by evaluating evidence</td>
</tr>
<tr>
<td>Subtype of Evaluation</td>
<td></td>
</tr>
<tr>
<td>Evaluation/Assessment</td>
<td>Determination of a value, conclusion, or inference by evaluating evidence.</td>
</tr>
<tr>
<td>Provision</td>
<td>To supply/make available for use</td>
</tr>
<tr>
<td>Referral</td>
<td>The act of clinicians/providers sending or directing a patient to professionals and/or programs for services (e.g., evaluation, treatment, aid, information, etc.)</td>
</tr>
</tbody>
</table>
## SDOH Domain Code Dashboard

<table>
<thead>
<tr>
<th>Domain</th>
<th>Activities (Aligns with USCDI SDOH Data Class)</th>
<th>Select Codes Present</th>
<th>Comprehensive List of Codes Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Insecurity</td>
<td>Screeners (LOINC)</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnoses (SNOMED CT, ICD-10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goals (LOINC, SNOMED CT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interventions (SNOMED CT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing Instability</td>
<td>Screeners (LOINC)</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnoses (SNOMED CT, ICD-10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goals (LOINC, SNOMED CT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interventions (SNOMED CT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homelessness</td>
<td>Screeners (LOINC)</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnoses (SNOMED CT, ICD-10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goals (LOINC, SNOMED CT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interventions (SNOMED CT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate Housing</td>
<td>Screeners (LOINC)</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnoses (SNOMED CT, ICD-10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goals (LOINC, SNOMED CT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interventions (SNOMED CT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Insecurity</td>
<td>Screeners (LOINC)</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnoses (SNOMED CT, ICD-10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goals (LOINC, SNOMED)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interventions (SNOMED CT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Insecurity</td>
<td>Screeners (LOINC)</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnoses (SNOMED CT, ICD-10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goals (LOINC, SNOMED CT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interventions (SNOMED CT)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[https://confluence.hl7.org/display/GRAV/SDOH+Data+Elements+And+Status](https://confluence.hl7.org/display/GRAV/SDOH+Data+Elements+And+Status)
Terminology Activities Under Consideration 2022+

Domains
○ Discrimination/bias/racism
○ Green Space
○ Adverse Childhood Experiences (ACES)
○ Expanded Material Hardship Elements
○ Incarceration
○ Migrant Laborers
○ Others based on Healthy People 2030 Objectives

Activities
○ Collaborate on shared ontologies and open taxonomies.
○ Develop supplemental terminology deliverables to address sharing information on social care program eligibility and enrollment.
○ Participate in quality measure development to lend coding, content, and measurement insight relevant to Gravity’s work.
Technical Workstream
Technical Workstream Powered By

newwave

&

SAFFRON labs

&

AMA
This is a framework Implementation Guide (IG) and supports multiple domains.

IG support the following clinical activities:
- Assessments
- Health Concerns / Problems
- Goals
- Interventions including referrals
- Consent
- Aggregation for exchange/reporting
- Exchange with patient/client applications
- Draft specifications for race/ethnicity exchange

STU1 published August 2021

STU2 balloted in HL7 January 2022 Ballot Cycle; target Summer 2022 publication

http://hl7.org/fhir/us/sdoh-clinicalcare/STU1/
Technical Workstream FHIR Implementation Guide Use Cases

1. Document SDOH data in conjunction with the patient encounter and define Health Concerns / Problems.
2. Patient and provider establish SDOH related goals
3. Plan, communicate, and track related interventions to completion.
4. Measure outcomes.
5. Establish cohorts of patients with common SDOH characteristics for uses beyond the point of care (e.g., population health, quality reporting, public health, and risk adjustment/ risk stratification).
6. Manage patient consent

http://hl7.org/fhir/us/sdoh-clinicalcare/STU1/
1. Define and identify methods of anonymization of data to support reporting for public health (where deidentified data is appropriate).

2. Develop use cases and requirements for aggregation and deidentification of SDOH information for population health and research.

3. Develop and/or incorporate new use cases that can be supported by existing FHIR IG:
   - CBO to CBO Data Exchange
   - CBO to State Agency Data Exchange
Pilots Workstream
Pilots Workstream Powered By

ONC
Office of the National Coordinator for Health Information Technology

ACL
Administration for Community Living

AARP
Gravity Three-Tiered Piloting Approach

- Defines incremental tiers for testing Gravity standards (terminology and technical)
  - Will allow entities with limited health IT standards adoption to reach attainable milestones during Piloting Phases.
  - Entities may participate at any Tier.

**Tier I**
- Basic, information content verification
  - Establish information infrastructure and terminology for Tiers II and III
  - Information can be exchanged by any method or not at all

**Tier II**
- Secure, Electronic Information Exchange
  - Exchange data defined in Tier I
  - Leverage established content and transport standards

**Tier III**
- Complete Gravity SDOH Data Model and Exchange
  - Implement complete Gravity FHIR IG data model
  - Implement Gravity FHIR IG exchange standards
  - Import/export SDOH datasets via robust technologies

* Minimum requirements for Gravity Pilots

Primary focus of FHIR Pilots
Call for Participation!

- We are currently seeking entities to participate in testing the Gravity defined coded concepts and/or the HL7 SDOH FHIR IG STU1 and/or STU2.
- We will be standing up a **Pilots Affinity Group** to convene participating sites via a monthly webinar. Stay tuned!
- Please submit your Pilot interest to [gravityproject@emiadvisors.net](mailto:gravityproject@emiadvisors.net).
Funded Pilots Testing Gravity Standards

ONC Awardees
- OCHIN
- Alliance Chicago
- UT Austin (LEAP Awardee)


ACL Phase 2 Challenge Teams
- Closing the Loop Together in Southeast Michigan
- FHIR-FLI
- Missouri Aging Services Data Connectivity & Interoperability
- Thrive Hub South Carolina Referral System

Success Factors
Success Factors—Integration of Data Standards Into…

**INNOVATION**
New tools for capture, aggregation, analytics, and use.

**POLICY**
(e.g., ONC USCDI, CMS Promoting Interoperability, State Medicaid Director Letters)

**PAYMENT MODELS**
(e.g., CMMI SDOH Model)

**PROGRAMS**
(e.g., Medicare Advantage, Medicaid Managed Care, Hospital QRRP, MIPS).

**PRACTICE**
(e.g., repeatable process for adoption, implementation, and use of SDOH data at practice level).

**GRANTS**
(e.g., ACL Challenge Grant, ONC Health IT LEAP)

**OTHER STANDARDS**
HL7 FHIR Accelerators (DaVinci, Argonaut, CARIN)
Gravity Standards Included in Policy, Programs, & Grants

- **July 2021**: Gravity data elements included in **ONC USCDI version 2**
- **April 2022**: CMS FY 2023 inpatient prospective payment system and long-term hospitals proposed rule includes voluntary reporting of screening for Social Drivers of Health, including using **USCDI v2 SDOH data classes**.
- **May 2022**: CMS CY 2023 **Medicare Advantage (MA) and Part D final rule requires** Special Needs Plans (SNPs) include standardized questions on **housing stability, food security, and access to transportation** as part of their currently required health risk assessments.
  - CMS will issue sub-regulatory guidance on the questions but intends to align them with the SDOH Assessment data element in USCDI v2.
- **Gravity standards included in three federal grant programs**:
  - **Administration for Community Living (ACL) Social Care Challenge Grant**
  - **ONC Leading Edge Acceleration Projects (LEAP) in Health IT Referral Management to Address SDOH Aligned with Clinical Care**
  - **Administration for Children & Families (ACF) Human Services Interoperability Innovations Grant**
Program Integration: CMS State Health Official (SHO) Letters

**SHO# 20-003 Implementation of the CMS Interoperability and Patient Access Final Rule**

- Medicaid managed care plans and CHIP managed care entities must comply with requirement to share patient data electronically using, at a minimum, USCDI data classes and elements.
- As USCDI moves from v1 to v2 and so on, Medicaid will comply as required by 45 CFR part 170 (CEHRT).

**SHO# 21-001 Opportunities in Medicaid and CHIP to address SDOH**

- States are required to design technical infrastructure for Mechanized Claims Processing, Information Retrieval Systems, and care coordination hubs that are interoperable with human services programs, HIEs, and public health agencies, as applicable.
- States must ensure alignment of the claims processing and IRS systems with CEHRT.

States are encouraged to review ISA SDOH standards and review and participate in the Gravity Project.
Gravity Alignment to HHS Strategic Approach to Addressing SDOH to Advance Health Equity

Data standards to support health and human services integration
Gravity Alignment to HHS Strategic Approach to Addressing SDOH to Advance Health Equity

How To Engage!
Establish SDOH Information Exchange
Foundational Elements

Community Readiness and Stewardship

Mission and Purpose
Value and Principles

Policy
Legal

Measurement and Evaluation
Financing

Implementation
Services

Technical Infrastructure
and Data Standards

User Support and
Learning Network

Governance

https://www.healthit.gov/news/events/oncs-social-determinants-health-information-exchange-learning-forum
SDOH Interoperability Considerations at State/Local Level

- Incorporate terminology and data exchange standards in **payment contracts and reporting requirements**.
- Provide specific **technical guidance** for a provider to use in their procurement specifications.
- **Embed incentives** for adopting technology capable of sharing standards based SDOH information.
- Form **health IT procurement “commons”**—participate in building shared, national resources for procurement specifications, interoperability and data-sharing quality measurement, testing and certification of plug and play technologies, and recognize common standards and architecture.
- **Finance testing and piloting** of the terminology and data exchange standards with data sharing partners.

Join the Gravity Project!

Learn More
https://confluence.hl7.org/display/GRAV/Join+the+Gravity+Project

• Workgroup meets bi-weekly on Thursdays’ 4:00 to 5:30 pm ET
• SDOH FHIR IG Workgroup s. 3:00 to 4:00 pm ET

• Submit SDOH domain data elements (especially for Interventions):
https://confluence.hl7.org/display/GRAV/Data+Element+Submission

Help us with Gravity Education & Outreach
Use Social Media handles to share or tag us to relevant information
@thegravityproj
https://www.linkedin.com/company/gravity-project

Help us find new sponsors and partners
Partner with us on development of blogs, manuscripts, dissemination materials
Gravity PMO Team

Evelyn Gallego
Senior Advisor
evelyn.gallego@emiadvisors.net
@egallego
linkedin.com/in/egallego/

Jillian Annunziata
Program Manager
jillian.annunziata@emiadvisors.net
@j_Nunz4
linkedin.com/in/jillianannunziata/

Gabriela Gonzalez
Pilots Lead
gabriela.gonzalez@emiadvisors.net
linkedin.com/in/gabgonza7/

Sarah DeSilvey
Clinical Informatics Director
sarah.desilvey@med.uvm.edu
@sarcandes
linkedin.com/in/sarah-desilvey-fnp/

Greg Harris
Acting Technical Director
gregory.harris@newwave.io

Mark Savage
SDOH Policy Lead
MarkSavage.eHealth@pacbell.net
@SavageMeHealth
linkedin.com/in/mark-savage-34aa03126/

Lenel James
Payer Advisor
Lenel.James@bcbsa.com
linkedin.com/in/lenel-james-4435ba-

Additional questions? Contact: gravityproject@emiadvisors.net or visit https://thegravityproject.net