

The Gravity Project: A Social Determinants of Health Coding Collaborative

Project Charter

May 14, 2019

Version 1.5

Version Log

Date	Version Number	Author	Description of Revisions
Jan 16, 2019	1.0	SDHCC Project Team	Draft version for steering committee Review
Feb 15, 2019	1.1	SDHCC Project Team	Updated with steering committee feedback
Feb 27, 2019	1.2	SDHCC Project Team	Updated with steering committee feedback
Mar 14, 2019	1.3	Gravity Project Team	Updated SDHCC to "Gravity Project" Updated project team members
May 2, 2019	1.4	Gravity Project Team	Updated timeline and timeline graphic
May 14, 2019	1.5	Gravity Project Team	Corrected acronym error

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Background

The influence of social determinants on health outcomes is increasingly recognized in emerging payment reform programs, federal and state-based policies, and information technology initiatives. Social determinants of health (SDH) are defined by the World Health Organization as the conditions in which people are born, live, work, and age.¹

The growing awareness of how SDH shape health has contributed to efforts to address actionable socioeconomic risk factors through the health care delivery system. Recommendations from national groups, including the American Academy of Pediatrics², American Academy of Family Physicians³, Agency for Healthcare Research and Quality⁴, National Quality Forum (NQF)⁵, and Institute for Health Care Improvement⁶ underscore the various roles the health care system could play in helping to reduce patients' social risk factors.

These national “calls to action” for health care systems have spurred the proliferation of innovations, including a wide range of social risk screening tools and practice-based interventions.⁷ Some of these innovations have helped to reduce social risks, improve health outcomes, and lower costs.⁸ The experimentation in this area has been bolstered by new value-based payment models and accountable care organizations (ACOs), which together offer an array of incentives to advance coordinated care between medical and social service organizations.

Many of the recent innovations at scale in this area begin with the strategic collection of SDH data. As examples, the Centers for Medicare & Medicaid Services Innovation Center (CMS Innovation Center) [Comprehensive Primary Care Plus](#) Model requires providers to assess patients' social risks; and the CMS Innovation Center's Accountable Health Communities Model developed a [social risk assessment](#) tool to help identify and address social risks across clinical and community-based settings.

These emerging initiatives to collect SDH data in health care settings present new challenges to national goals to standardize patient data recorded in EHRs.^{9,10} Two Health Information Technology for Economic and Clinical Health Act (HITECH) Programs¹¹ require providers to use health IT systems that capture specific patient data in standardized formats to enable interoperable data exchange with other systems.

These programs require that EHRs use a [common clinical data set \(CCDS\)](#), including specific medical codes, to represent concepts such as race, ethnicity, and preferred language, but they include limited requirements to represent other social concepts, including social risk assessments and related social care interventions. As an example, though the ONC 2015 Edition includes an optional criterion around [Social, Psychological, and Behavioral Data](#), which helps to define codes for SDH concepts based on the National Academy of Sciences, Engineering, and Medicine [Recommended Social and Behavioral Domains and Measures](#), it does not reflect the wide range of social risk factors being collected in clinical settings.¹²

In light of growing interest around capturing SDH data in health care settings and concerns about the capacity of existing medical terminology standards to effectively capture the necessary data, the Social Interventions Research and Evaluation Network (SIREN) convened a diverse group of stakeholders, including experts in SDH data from health care, community health, and health information technology (health IT), in November 2017 to develop a strategy for achieving consensus-based comprehensive coding standards for SDH data capture in EHR systems. Participants concluded that current codes are insufficient to

represent the data needed to support uses related to clinical care, panel management/quality improvement, community health improvement, payment/risk adjustment, and research. As a next step, participants recommended convening a multi-stakeholder group through an open, public process to better articulate SDH data use cases. In response, SIREN, with sponsorship from the Robert Wood Johnson Foundation, initiated the Gravity Project: A Social Determinants of Health Coding Collaborative

Scope Statement

The Gravity Project will:

1. Develop use cases to support documentation of specific social domains across enrollment, screening, diagnosis, treatment, and population health management activities within EHR and related systems;
2. Identify common data elements and their associated value sets to support the uses cases;
3. Develop a consensus-based set of recommendations on how best to capture and group these data elements for interoperable electronic exchange and aggregation; and
4. Initiate creation of a HL7® Fast Health Interoperability Resource (FHIR®) Implementation Guide based on the defined use cases and associated data sets.

Based on recommendations from expert advisors, existing literature linking SDH to health,^{13,14,15,16} and active local, state, and federal demonstration projects,^{17,18} the initial phase of this project will focus on three priority social domains: **food security, housing stability and quality, and transportation access**. The work will examine and augment coding standards in each domain that can be used to capture three core health care activities:

1. **Screening:** This refers to activities where SDH data from individual patients are initially captured, either through a self-administered, provider-administered, or health plan-administered questionnaire.
2. **Assessment/Diagnosis:** These include activities where providers and health plans analyze the data obtained through screening to determine a patient's social risks and needs.
3. **Treatment/Interventions:** These refer to actions undertaken by providers and health plans to help address identified social needs. These activities include referrals, case management, care planning, counseling and education, and provision of services and orders.

Challenge Statement

The systematic documentation and aggregation of SDH data in EHRs and related systems is limited due to:

1. partial understanding of the value and use of such data for clinical care and population health management;
2. capture of SDH data in unstructured and non-standardized formats, which inhibits the ability to normalize, exchange, and aggregate the data regardless of the data source; and
3. gaps in and overlap between existing terminologies and codes available to represent SDH-related activities undertaken in clinical delivery settings.

Standardization and harmonization of SDH concepts, regardless of the social risk assessment tool used, requires a consensus-based approach. Current tools merit further validation and testing across a variety of settings and clinical workflows. However, based on the growing collection of social risk data in health care systems, an immediate opportunity exists to support data collection, data aggregation, data sharing, quality measurement, benchmarking, and risk adjustment.¹⁹ Health IT plays a critical, untapped role in enabling the growing data infrastructure needed in this area.

Out of Scope

This project will not focus on evaluating, testing, or harmonizing existing social risk screening tools and instruments, nor will it identify social risk data elements that do not directly support one of the three health care activities previously listed in the Scope Statement. This project also will not validate or provide incentives for implementation of the identified SDH data elements.

Project Approach and Deliverables

The Gravity Project will be facilitated as an open, transparent, and virtual community that promotes broad stakeholder engagement from diverse stakeholder groups. Deliverables will be reviewed and finalized following [nationally recognized standard development principles](#) of openness and due process. The Phase 1 approach and deliverables are purposely designed to allow for rapid update into existing and upcoming health data interoperability and standards acceleration projects.

The Gravity Project Phase 1 activities and five deliverables (**bolded**) are:

1. Description of functional requirements from **use cases** describing key conditions and business rules to enable the documentation of SDH-related data.
2. List of **data elements and associated value sets** (question-and-answer sets) related to three SDH domains: food security; housing stability and quality; and transportation access.
3. Identification of **codes** and **coding gaps** for representing identified SDH data elements and associated value sets in EHRs.
4. **Recommendations** for terminology and coding sources to address coding gaps.
5. Initiate development of a **HL7 FHIR SDH Implementation Guide** based on the defined use cases and associated data sets (groupings of data elements and value sets).

Proposed Timeline

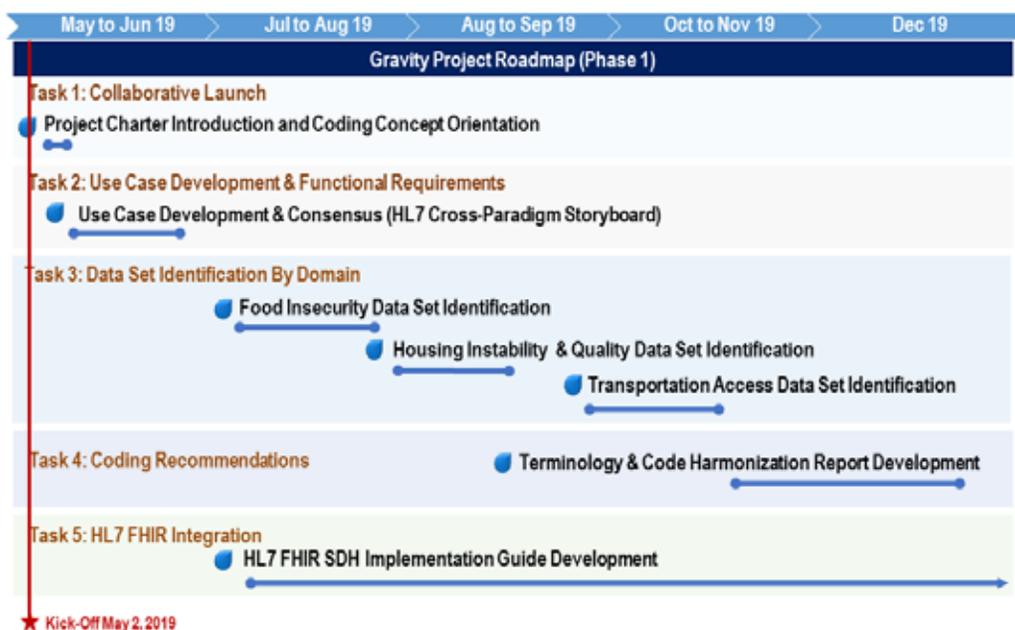
The Gravity Project Phase 1 timeline (Figure 1) represents notional estimates of planned activities and may be adjusted as work moves forward through the project. The timeline projects collaborative members will engage and participate in weekly virtual meetings facilitated through the HL7 Confluence Platform.

- May 2019 to June 2019
 - Project charter introduction and coding concept orientation
- June 2019 to July 2019
 - Use case development and consensus
- July 2019 to August 2019
 - Food insecurity data set and value sets identification and consensus
- August 2019 to September 2019
 - Housing instability and quality data set and value sets identification and consensus
- September 2019 to October 2019
 - Transportation access data set and value sets identification and consensus
- November 2019 to December 2019
 - Terminology and coding harmonization recommendations report development

May 2019 to December 2019 (Task 5)

- HL7 FHIR SDH Implementation Guide development
- Gravity Project Phase 2 project funding plan development

Figure 1: Gravity Project Phase 1 Roadmap



Interoperability Glide Path

Phase 2 of the Gravity Project will be carried out in 2020 with further development and balloting of the HL7 FHIR SDH Implementation Guide as part of the HL7 balloting process. This process includes working with the coding and terminology suppliers to address the coding gaps defined in Phase 1 and developing and testing HL7 FHIR-based coded value sets to represent the defined SDH data sets. Phase 2 developed artifacts will inform near-term interoperability activities, such as:

- Expansion of the Office of the National Coordinator (ONC) [U.S. Core Data for Interoperability data classes](#)
- Incorporation of SDH FHIR data sets in existing HL7 FHIR-based initiatives and related projects including HL7 FHIR Argonaut Project, HL7 FHIR DaVinci Project, CARIN Alliance, and Healthcare Services Platform Consortium Clinical Information Interoperability Council
- Testing and validation of SDH FHIR data sets through reference implementations, pilots, and connect-a-thons.

The Gravity Project artifacts may serve as a starting point to propel future broader regulatory, payment reform, and technology investments, such as:

- Incorporation of standardized SDH concepts in federal and state-based regulations and policies relevant to social and medical data integration
- New payment models centered on non-clinical services and interventions for population health management
- Innovative tools and capabilities that support documentation, analytics, and aggregation of SDH data regardless of the data source

Project Governance

The Gravity Project consists of a volunteer steering committee that provides overall expertise and support in guiding the progress of the Gravity Project. The Gravity Project Steering Committee convenes monthly and manages the following key responsibilities:

- Reviewing and providing input on project deliverables
- Identifying other related projects that can help inform or guide the project
- Identifying stakeholder groups to engage in the public collaborative and for future or follow-on activities
- Identifying and mitigating project risk
- Monitoring the quality of the project against established milestones
- Advising on project changes or shifts as they develop
- Disseminating project deliverables to outside stakeholder groups with shared interest
- Identifying opportunities to advance outputs of the project through other national or sponsored initiatives

Stakeholders and Other Interested Parties

Stakeholders and interested parties include the following:

- Providers and provider associations: clinical, community-based, long-term and post-acute, medical homes, accountable care organizations, health systems, and hospitals
- Payers: federal, state, commercial, and employers
- Beneficiaries
- Beneficiary advocates: beneficiary representatives and/or delegates, caregivers, family members, and other advocates
- Government agencies:
 - Centers for Disease Control and Prevention National Center for Health Statistics
 - CMS: Office of Minority Health, Center for Medicaid and CHIP Services, Center for Clinical Standards and Quality, CMS Innovation Center
 - Department of Defense
 - Department of Education
 - Department of Housing and Urban Development
 - Department of Labor
 - Department of Transportation
 - Health Resources and Services Administration
 - HHS Administration of Children and Families
 - HHS Administration of Community Living
 - HHS Agency for Healthcare Research & Quality
 - HHS Office of the Assistant Secretary for Planning & Evaluation
 - HHS Office of the National Coordinator for Health IT
 - Indian Health Service
 - National Institutes of Health: Office of Minority Health and Health Disparities
 - Social Security Administration
 - State Medicaid offices, state health and public health departments, and state health information exchange organizations
 - Substance Abuse and Mental Health Services Administration
 - Veterans Health Administration
- Vendors:

- EHR systems, PHR systems, mobile health systems and apps, health information exchange systems, home- and community-based service information systems, care management and care coordination systems
- Telehealth technologies
- Digital health technologies
- Device manufacturers
- Data warehouse/data mart
- Standards-related organizations: standards developing organizations, vocabulary/terminology organizations
- Privacy and security professionals

Potential Risks and Mitigation Strategies

- Failure to engage key stakeholders in contributing to, learning from, and committing to the SDH data element identification process
 - **Mitigation Strategy:** The Gravity Project team will establish and engage an Gravity Project Steering Committee to guide the project team on effective stakeholder outreach and education. The SDH Project Team will establish a public-facing collaborative website to share all project materials, including recorded collaborative meetings.
- Failure to align/reconcile overlapping terminologies and codes for the same SDH concept
 - **Mitigation Strategy:** The Gravity Project team will encourage at least one dedicated representative from each of the identified terminology suppliers (LOINC, SNOMED CT, CPT, ICD-10) to participate in the SDH Coding Collaborative.
- Identification of SDH standards that are misaligned with the nationwide health IT infrastructure standards
 - **Mitigation Strategy:** The Gravity Project Steering Committee will include representatives from ONC who are responsible for defining and advancing nationwide health IT infrastructure standards.
- Failure to achieve consensus on a general use case that can be applied for SDH documentation in EHRs
 - **Mitigation Strategy:** The Gravity Project technical approach involves an established process to capture, review, and reconcile each collaborative participant's feedback throughout the project lifecycle
- Failure to achieve consensus on SDH data elements and value sets within the allocated timeframe for each domain workgroup
 - **Mitigation Strategy:** The Gravity Project technical approach follows agile project management processes that allow flexibility in revising project schedule as needed; Gravity Project technical approach includes established process to capture, review, and reconcile each collaborative participant's feedback throughout the project lifecycle.
- Issues of trust between diverse stakeholder groups, specifically for smaller entities that are often in competition for funding and other resources while working toward similar aims
 - **Mitigation Strategy:** No intellectual property will be requested or shared as part of this project. The Gravity Project is solely focused on gathering functional requirements that can be used to inform future product or policy development.

Endnotes

- ¹ About Social Determinants of Health. World Health Organization. 2017. https://www.who.int/social_determinants/sdh_definition/en/
- ² AAP Council on Community Pediatrics. Poverty and child health in the United States. *Pediatrics* 2016;137.
- ³ Social Determinants of Health Policy. AAFP Home. 2016. <https://www.aafp.org/about/policies/all/social-determinants.html>
- ⁴ About the National Quality Strategy. U.S. Department of Health & Human Services. 2017. <https://www.ahrq.gov/workingforquality/about/index.html>.
- ⁵ NQF and the Aetna Foundation Map Approach to Overcome the Health Impact of Social Determinants. National Quality Forum. https://www.qualityforum.org/Overcoming_the_Health_Impact_of_Social_Determinants.aspx
- ⁶ Wyatt R, Laderman M, Botwinick L, et al. Achieving health equity: a guide for health care organizations. Cambridge, MA: Institute for Healthcare Improvement 2016.
- ⁷ Arons A, DeSilvey S, Fichtenberg C, Gottlieb L. Documenting social determinants of health-related clinical activities using standardized medical vocabularies. *JAMIA Open*, ooy051. 24 December 2018; <https://doi.org/10.1093/jamiaopen/ooy051>.
- ⁸ Gottlieb LM, Wing H, Adler NE. A systematic review of interventions on patients' social and economic needs. *Am J Prev Med* 2017;53:719-29.
- ⁹ Health Information Technology for Economic and Clinical Health Act of 2009, § H.R.1 *et seq.* (2009).
- ¹⁰ 21ST Century Cures Act of 2015, § H.R.34 (2015).
- ¹¹ CMS [Promoting Interoperability Program](#) and the [ONC Certification Program](#)
- ¹² Compendium of Medical Terminology Codes for Social Risk Factors. Research on Integrating Social & Medical Care. SIREN 1970. <https://sirenetwork.ucsf.edu/tools-resources/mmi/compendium-medical-terminology-codes-social-risk-factors>
- ¹³ Quality of Housing. Healthcare-Associated Infections. 2014. <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/quality-of-housing>
- ¹⁴ What is Food Insecurity in America? Hunger and Health. <https://hungerandhealth.feedingamerica.org/understand-food-insecurity/>
- ¹⁵ Nguyen, O. Redrawing the Boundaries of Medicine: The Case for Social Determinants of Health. UT Southwestern Medical Center. 2016 Oct. https://pdfs.semanticscholar.org/ff59/1c345b5bbbf59550409f56776ec507317ef0.pdf?_ga=2.61086956.1399824412.1545850528-946744215.1545850528
- ¹⁶ Social determinants of health series: Transportation and the role of hospitals. Health Research & Educational Trust. 2017 Nov. <http://www.hpoe.org/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf>
- ¹⁷ NQF and the Aetna Foundation Map Approach to Overcome the Health Impact of Social Determinants. National Quality Forum. https://www.qualityforum.org/Overcoming_the_Health_Impact_of_Social_Determinants.aspx
- ¹⁸ Accountable Health Communities Model. Center for Medicare & Medicaid Innovation. <https://innovation.cms.gov/initiatives/ahcm/>
- ¹⁹ Framework for Medicaid Programs to Address Social Determinants of Health: Food Insecurity and Housing Instability. Report. National Quality Forum, 2017. 1-57.