

# Gravity Project Overview: HIMSS MI



October 3, 2019

Lisa Nelson, MS, MBA, Gravity Technical Lead

MaxMD



# Agenda

- Gravity Introductions
- Background
- Scope
- Approach
- Deliverables

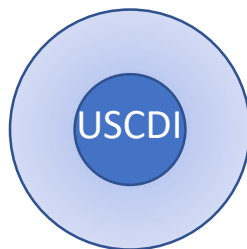
# Gravity Project Mission

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



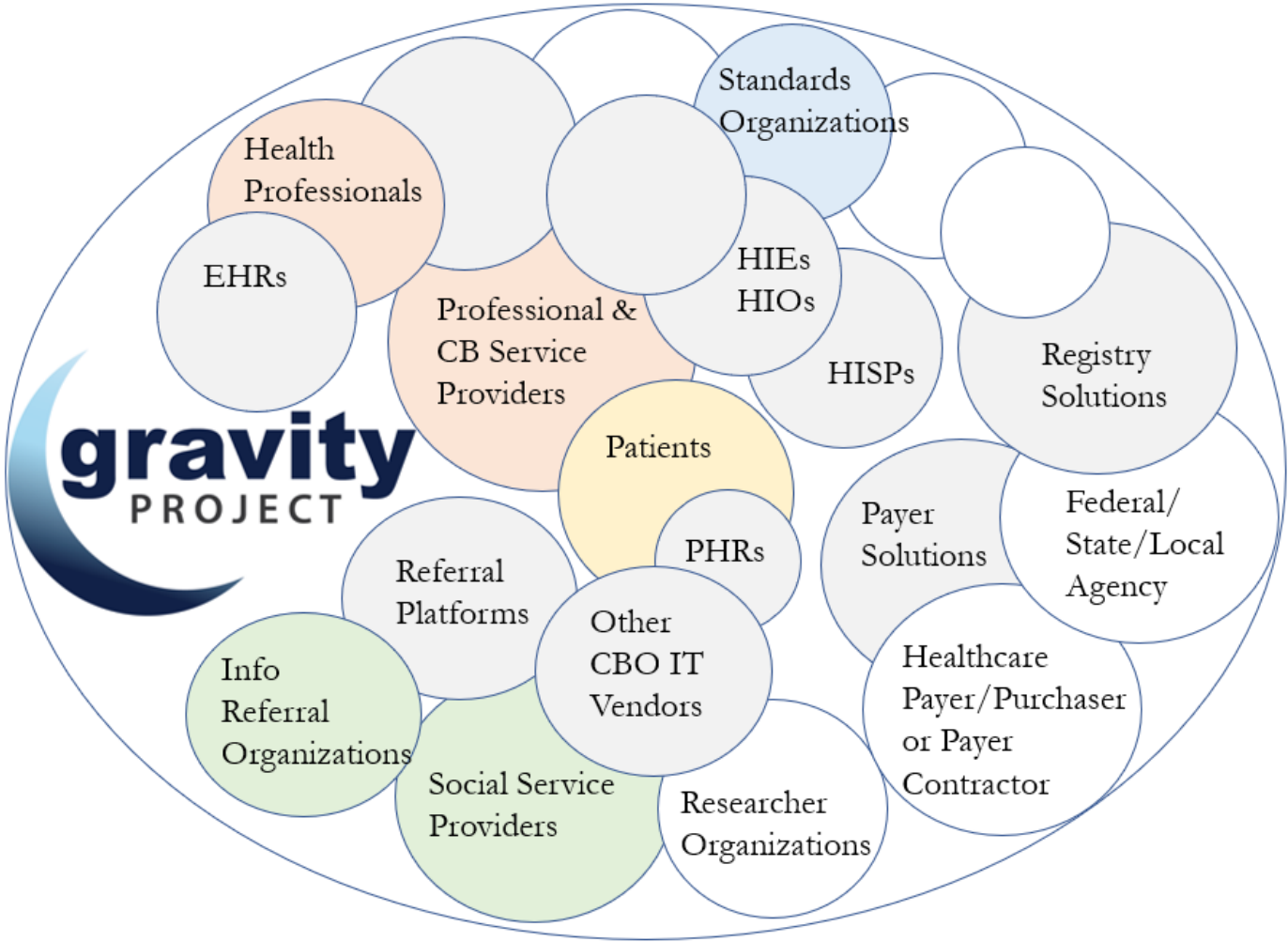
Accelerate  
Standards-based  
Info Exchange



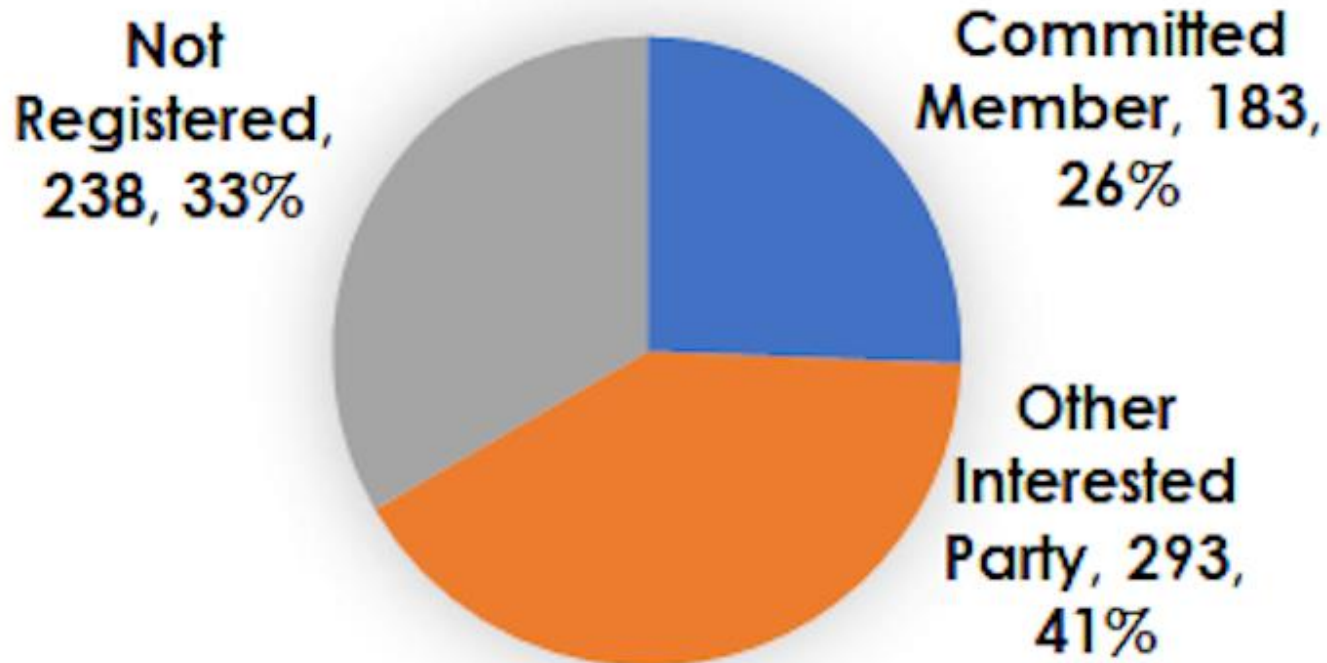
# Gravity Project Team

- **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!



# 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



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

July 25, 2019

## UnitedHealthcare Awarding \$1.1 Million to Northeast Ohio Nonprofits to Help Address Social Determinants of Health

John Jannarone

CorpGov.com July 30, 2019

## Health plans voice support for bill to address SDOH efforts

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

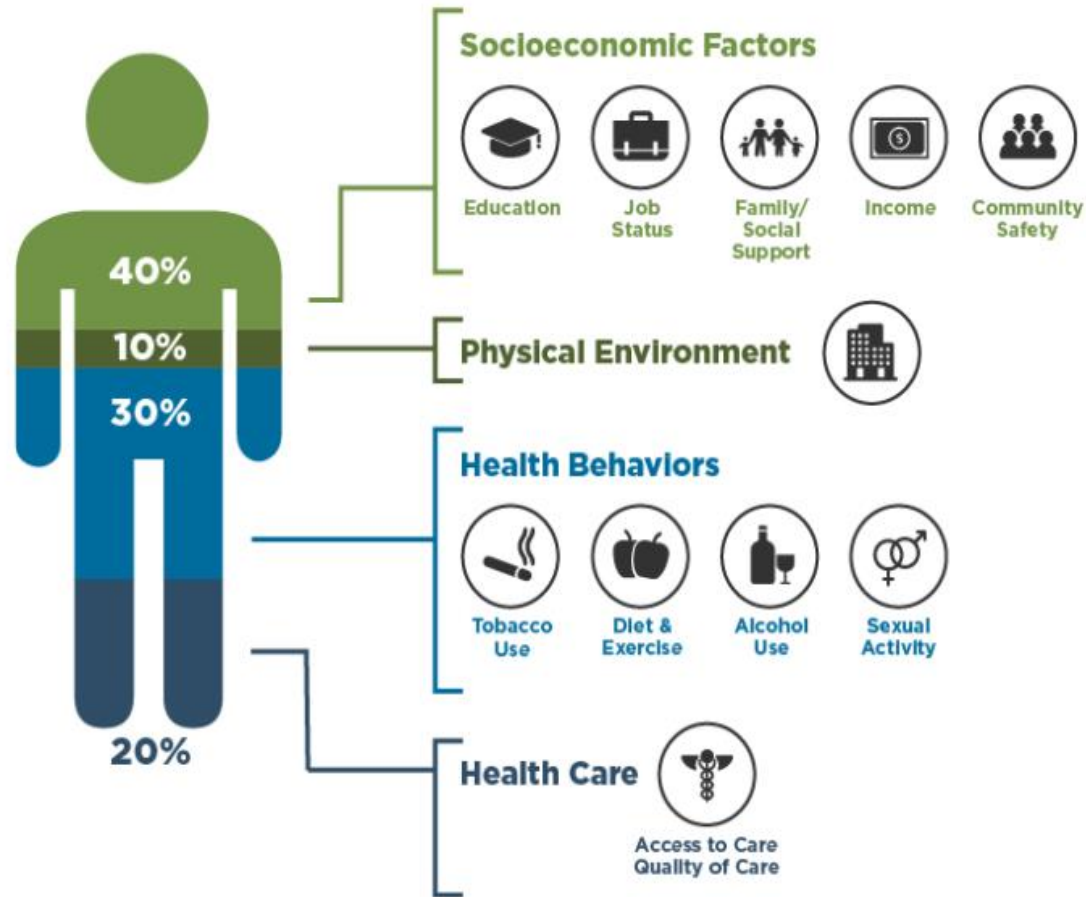
The two companies will work together to tailor a platform that will connect patients to community-based providers and other resources.

## 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?



# 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.

**coded**  
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



SNOMED CT

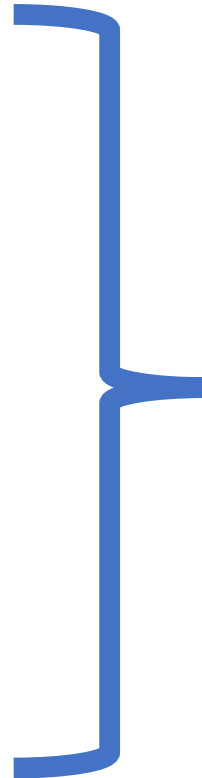


Arons A, DeSilvey S, Fichtenberg C, Gottlieb L. [Documenting social determinants of health-related clinical activities using standardized medical vocabularies](http://sirenetwork.ucsf.edu/tools-resources/mmi/compendium-medical-terminology-codes-social-risk-factors). JAMIA Open. 2018;2(1):81-88. (<http://sirenetwork.ucsf.edu/tools-resources/mmi/compendium-medical-terminology-codes-social-risk-factors>)



# SIREN Social Risk Codes Review

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



**20 Social  
Risk  
Domains**

# SIREN Social Risk Codes Review

**133** Screening question panel codes

**33** Screening procedure codes

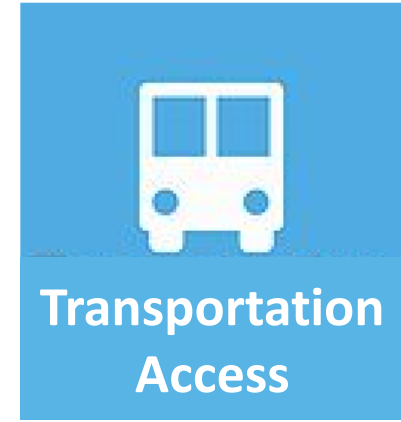
**686** Assessment/Diagnosis codes

**243** Treatment/Intervention codes

**1095** **SDH Codes**

Arons A, DeSilvey S, Fichtenberg C, Gottlieb L. [Documenting social determinants of health-related clinical activities using standardized medical vocabularies](http://sirennetwork.ucsf.edu/tools-resources/mmi/compendium-medical-terminology-codes-social-risk-factors). JAMIA Open. 2018;2(1):81-88. (<http://sirennetwork.ucsf.edu/tools-resources/mmi/compendium-medical-terminology-codes-social-risk-factors>)

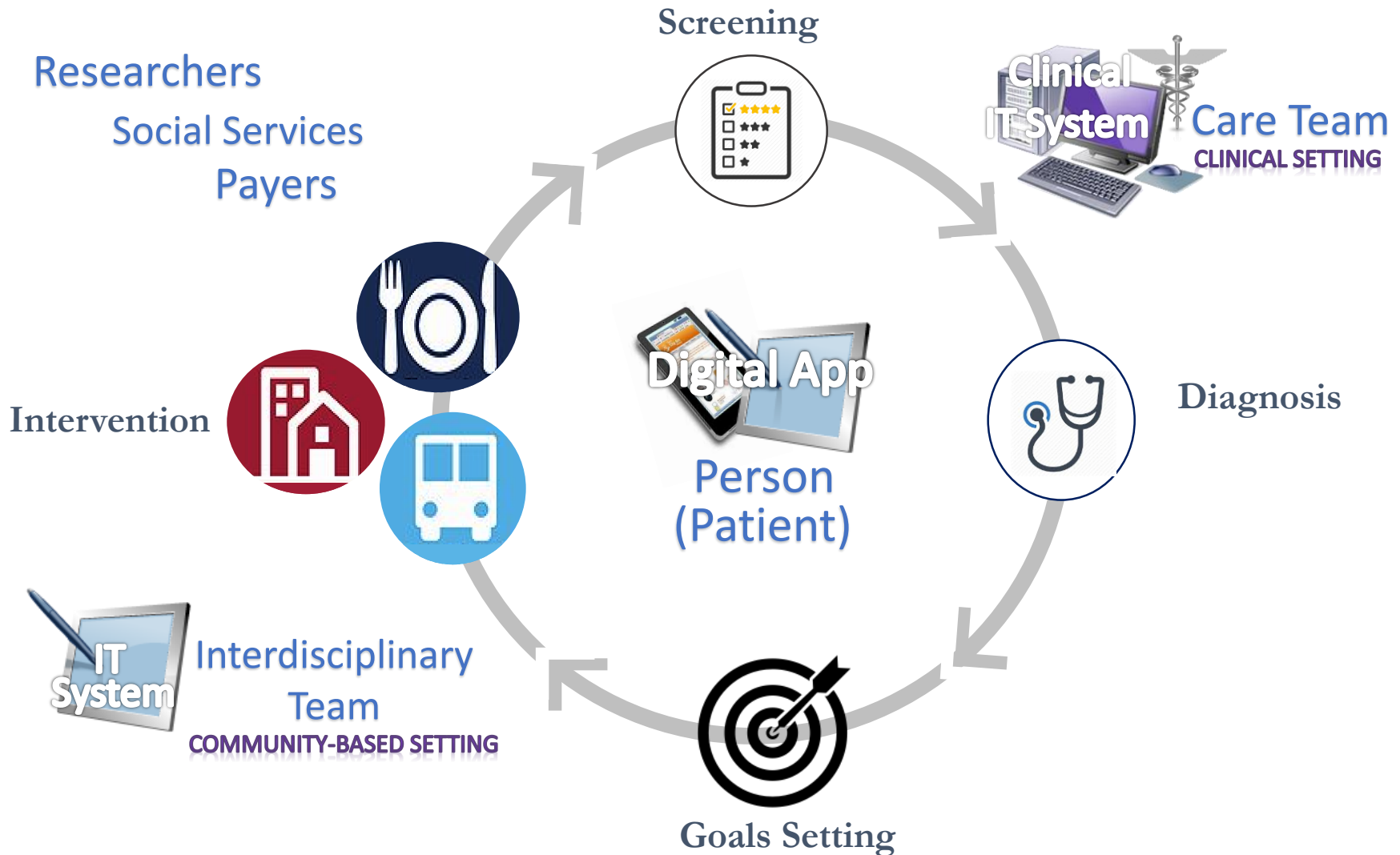
# Gravity Project Goals



- What concepts need to be documented?
- What codes reflecting these concepts are currently available?
- What codes are missing?

# Project Scope (WHAT)

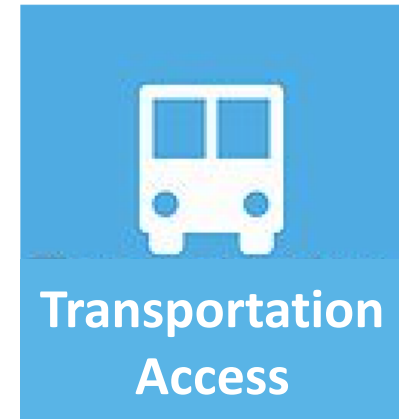
# Conceptual Framework



GOAL: **data-level interoperability** by enabling electronic documentation and exchange of SDOH data among all relevant users of data.

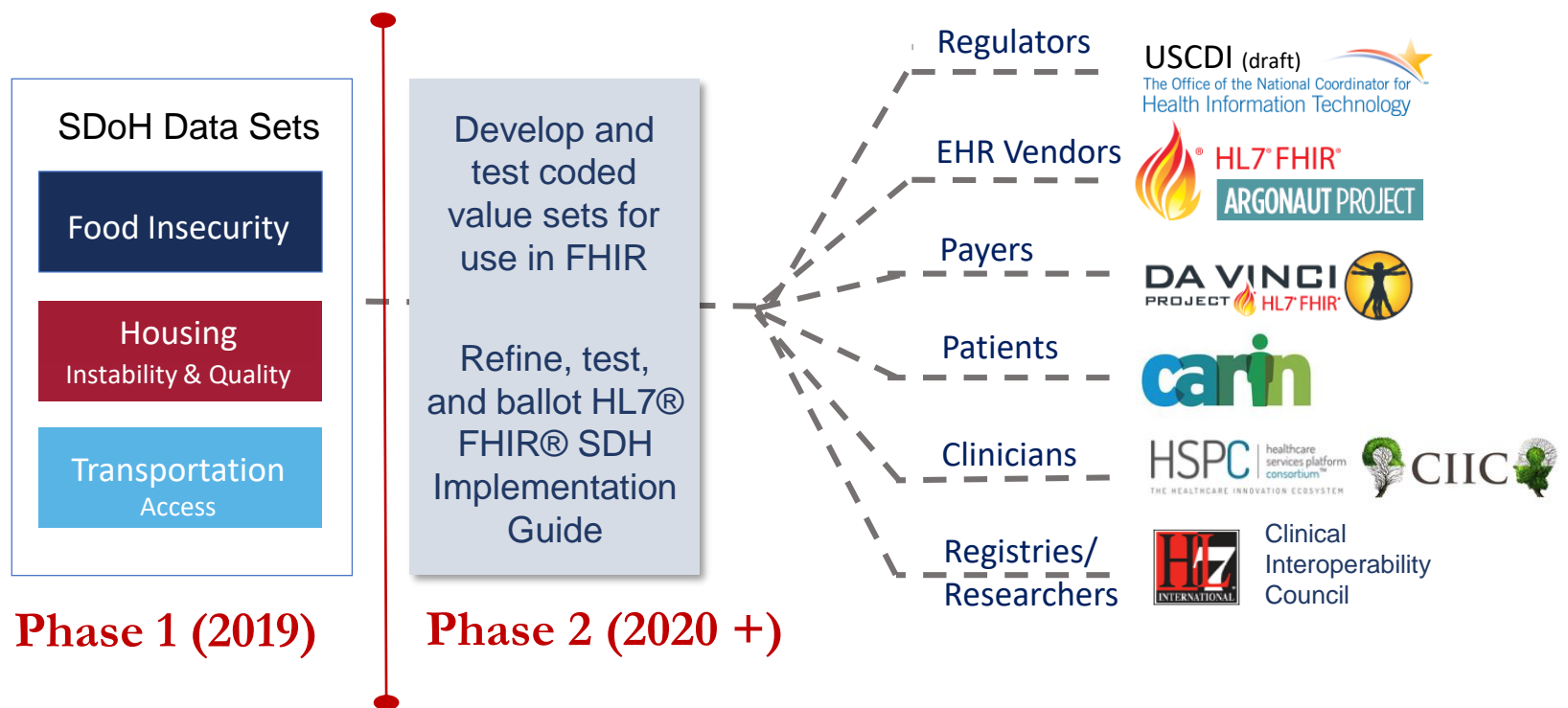
# Gravity Project Deliverables (Phase 1)

- 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



<http://www.hl7.org/about/fhir-accelerator/>

# Project Approach (HOW)



# Public Collaborative Process



Gravity Project

- Pages
- Blog
- SPACE SHORTCUTS
- HL7 Documentation & Help
- PAGE TREE
  - The Gravity Project Workgroup
    - Why the Name Gravity
    - Join the Gravity Project
    - FAQ
  - The Gravity Project Materials

## 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.

##### UPDATED 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 data. 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, please email request to [GravityProject@emiadvisors.net](mailto:GravityProject@emiadvisors.net).
- NOTE: Both member types can submit comments on project documentation. However, **only Committed Members may vote** like 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 partnership with the Centers for Disease Control and Prevention, is pleased to invite you to join the Gravity Project. Driven by the growing interest in capturing social risk and protective factor data in health care, SIREN brings industry leaders together to identify and harmonize social risk and protective factor data for interoperable electronic health information.

#### Quick Links

[Why the Name "Gravity"](#)

[Join the Gravity Project](#)

[Gravity Project Member List](#)

[Gravity Workgroup Page](#)

[Gravity Use Case Package](#)

[Project Materials](#)

[Data Element Submission Template and Instructions](#)

[Educational and Instructional Materials](#)

[Glossary](#)

[Relevant Work](#)

[HIMSS 2019 Presentation](#)

[SIREN Website](#)

<https://confluence.hl7.org/display/GRAV/The+Gravity+Project>

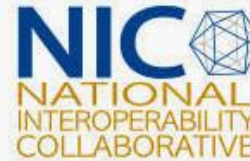
# Governance Structure: Advisory Steering Committee



The Office of the National Coordinator for Health Information Technology



VA | U.S. Department of Veterans Affairs



<https://confluence.hl7.org/pages/viewpage.action?pageId=46891907#TheGravityProject-GravityProjectSteeringCommittee>

May - Jun 19

Jul - Aug 19

Sep - Nov 19

Dec 19 - Jan 20

Feb - May 20

## Gravity Project Roadmap (Phase 1)

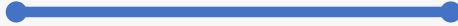
### Task 1: Collaborative Launch

Project Charter Introduction and Coding Concept Orientation



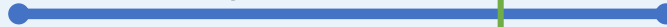
### Task 2: Use Case Development & Functional Requirements

Use Case Development & Consensus (HL7 Cross-Paradigm Storyboard)

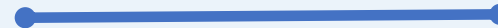


### Task 3: Data Set Identification By Domain

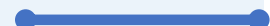
Food Insecurity Data Set Identification



Housing Instability & Quality Data Set Identification

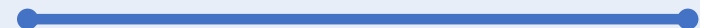


Transportation Access Data Set Identification



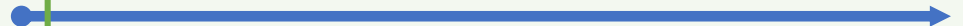
### Task 4: Coding Recommendations

Terminology & Code Harmonization Report Development



### Task 5: HL7 FHIR Integration

HL7 FHIR SDOH Implementation Guide Development



★ 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.

# Current Gravity Use Cases

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>

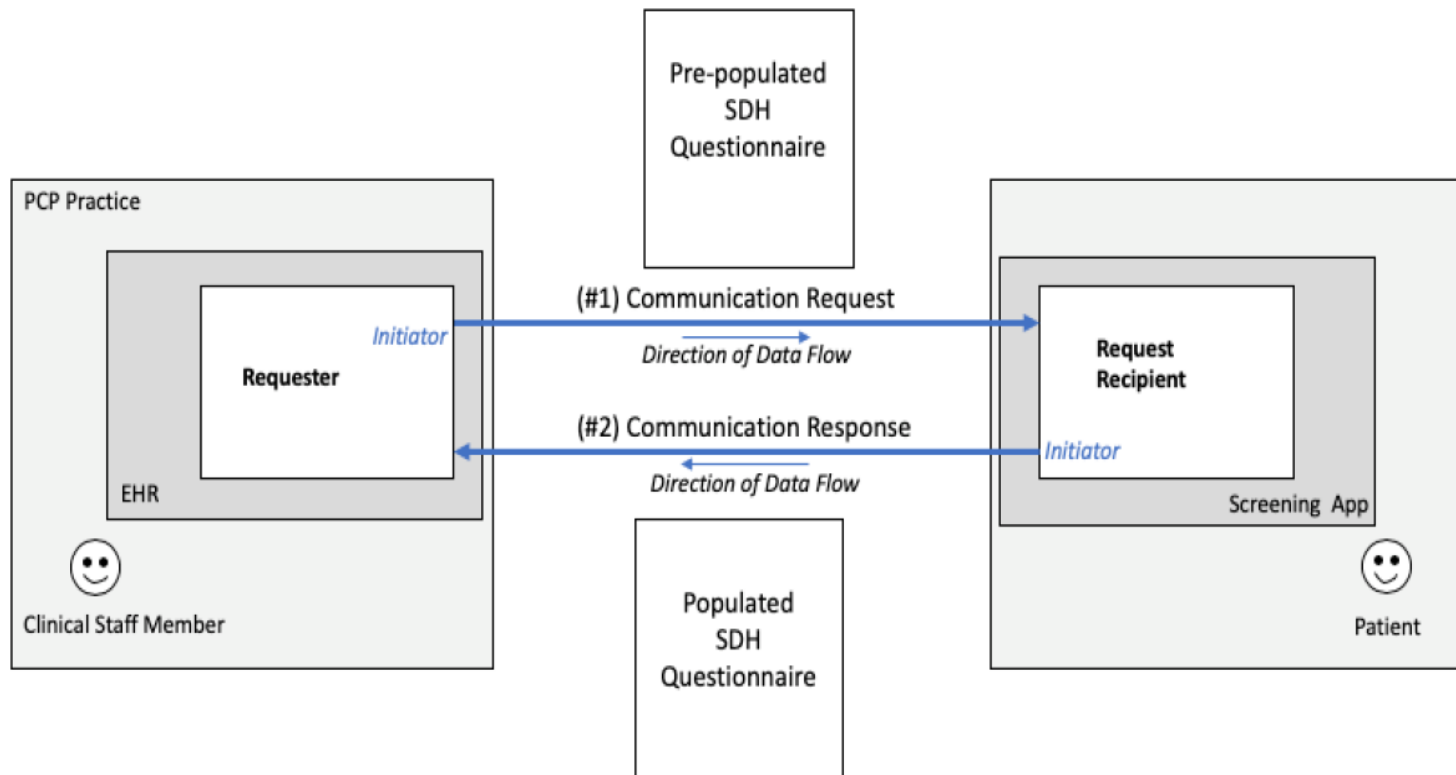
# Use Case Elements

- **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>

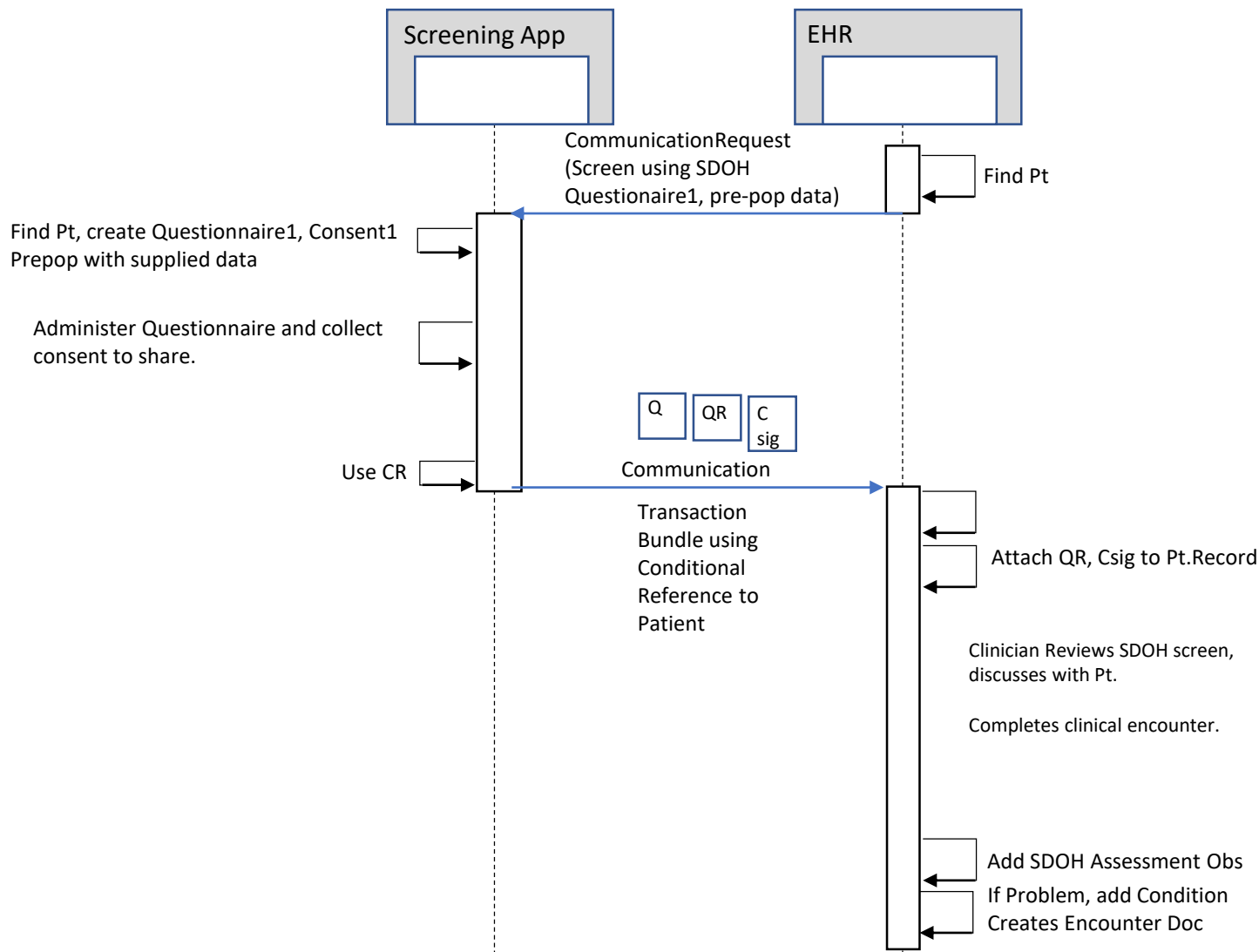


# Use Case 1: Document SDOH During Clinical Encounter



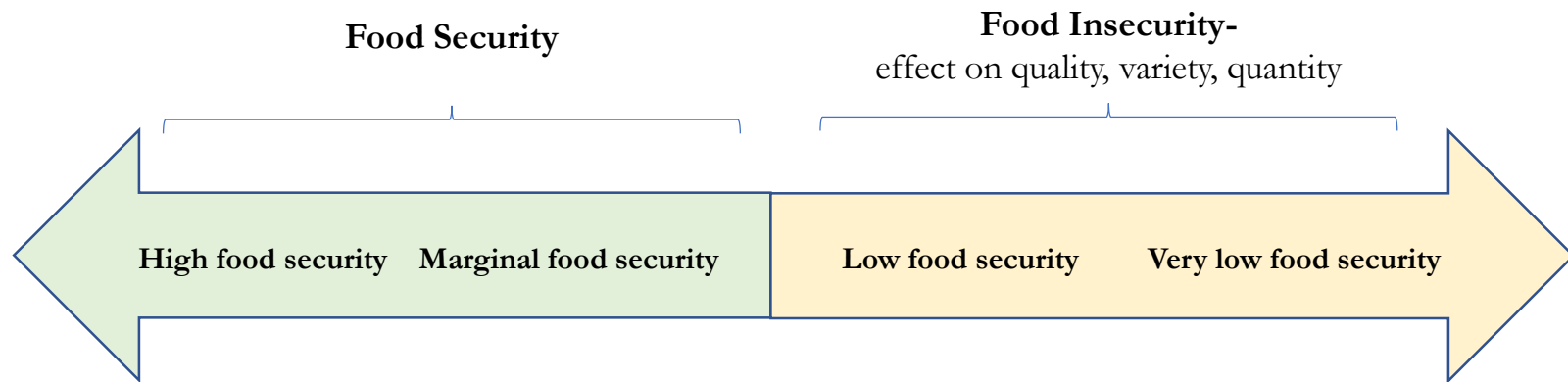
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# Use Case 1



# Food Insecurity Domain Kick-Off (July 18, 2019)

**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)



*(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

## WHO

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The four pillars of food security are availability, access, utilization and stability. From the World Summit on FI 2009 [http://www.fao.org/tempref/docrep/fao/meeting/018/K6406E\\_03.pdf](http://www.fao.org/tempref/docrep/fao/meeting/018/K6406E_03.pdf)

Food Security

} The presence, at all times, of physical, social and economic access to sufficient safe and nutritious food to meet dietary needs and food preferences for an active and healthy life

Food Insecurity

} The uncertainty or lack of physical, social and/or economic access to sufficient safe and nutritious food to meet dietary needs and food preferences for an active and healthy life

## USDA

**Food Security (broad Definition):** Access by all people at all times to enough food for an active, healthy life.

**Food Insecurity (broad definition) :** Limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.

Bickel, Gary, Mark Nord, Cristofer Price, William Hamilton, and John Cook: Guide to Measuring Household Food Security, Revised 2000. U.S. Department of Agriculture, Food and Nutrition Service, Alexandria VA. March, 2000.

Food Security

} Certain availability of nutritionally adequate and safe foods or certain ability to acquire acceptable foods in socially acceptable ways.

Food Insecurity

} Limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.

## Coates

From Coates (2013) Build it back better: Deconstructing food security for improved measurement and action, *Global Food Security*, 2(3) p188-194 <https://doi.org/10.1016/j.gfs.2013.05.002>

Food Security

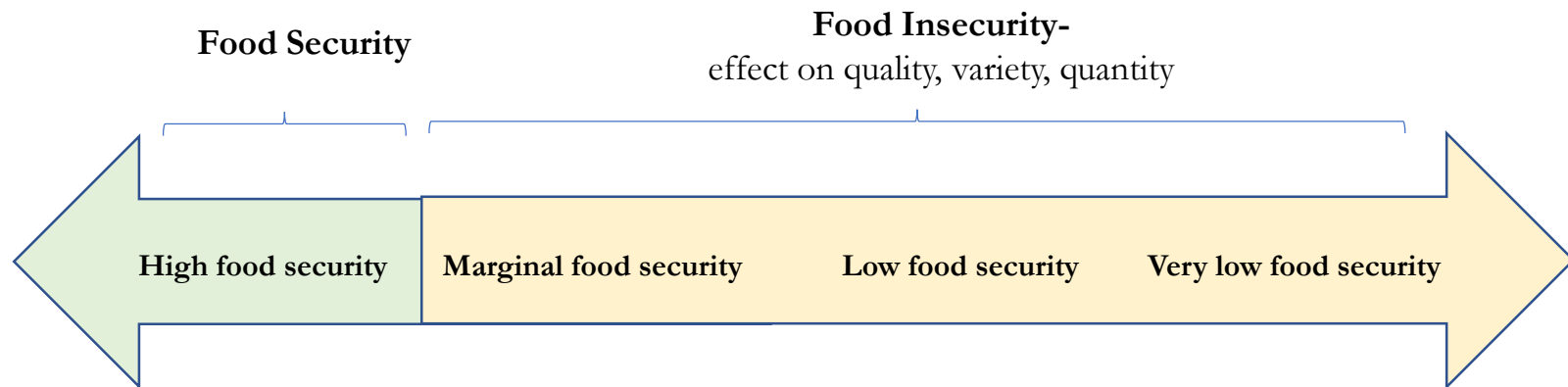
} Access to food that is: sufficient in quantity; adequate in nutritional quality; culturally acceptable; safe; and certain and stable.

Food Insecurity

} Lack of access to food that is: sufficient in quantity; adequate in nutritional quality; culturally acceptable; safe; and certain and stable.

# 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 )

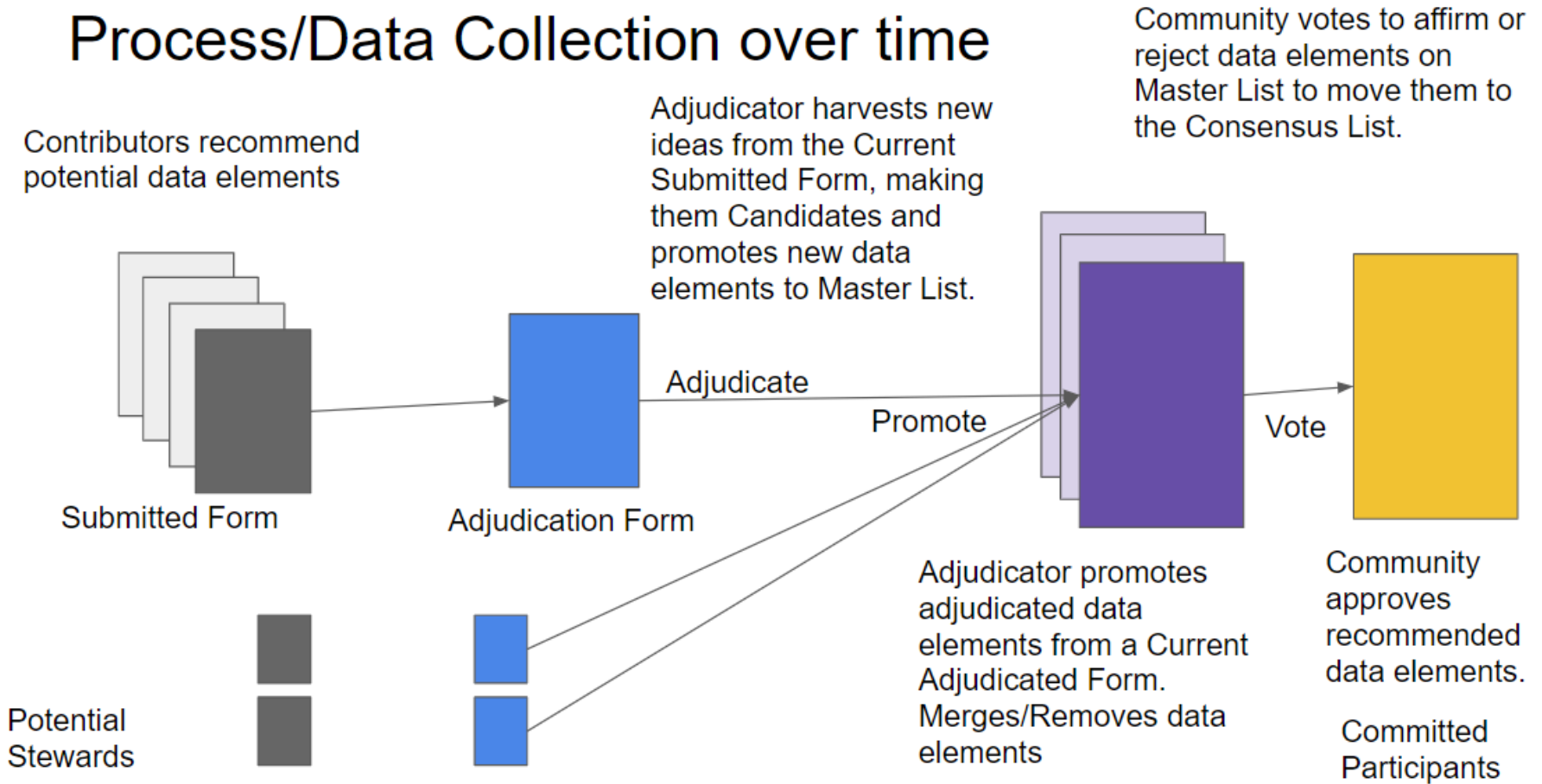


*(Gregory & Coleman-Jensen, 2017)*

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

# Data Element Submission & Adjudication Process

## Process/Data Collection over time



Adjudicated Master List: <https://confluence.hl7.org/display/GRAV/Food+Insecurity+Domain>

# Data Element Submissions Summary

**Total Submissions Received = 19**

Screening Tool/ Questions	Diagnosis	Goal	Intervention
56 Tools / 191 Questions	60	13	147

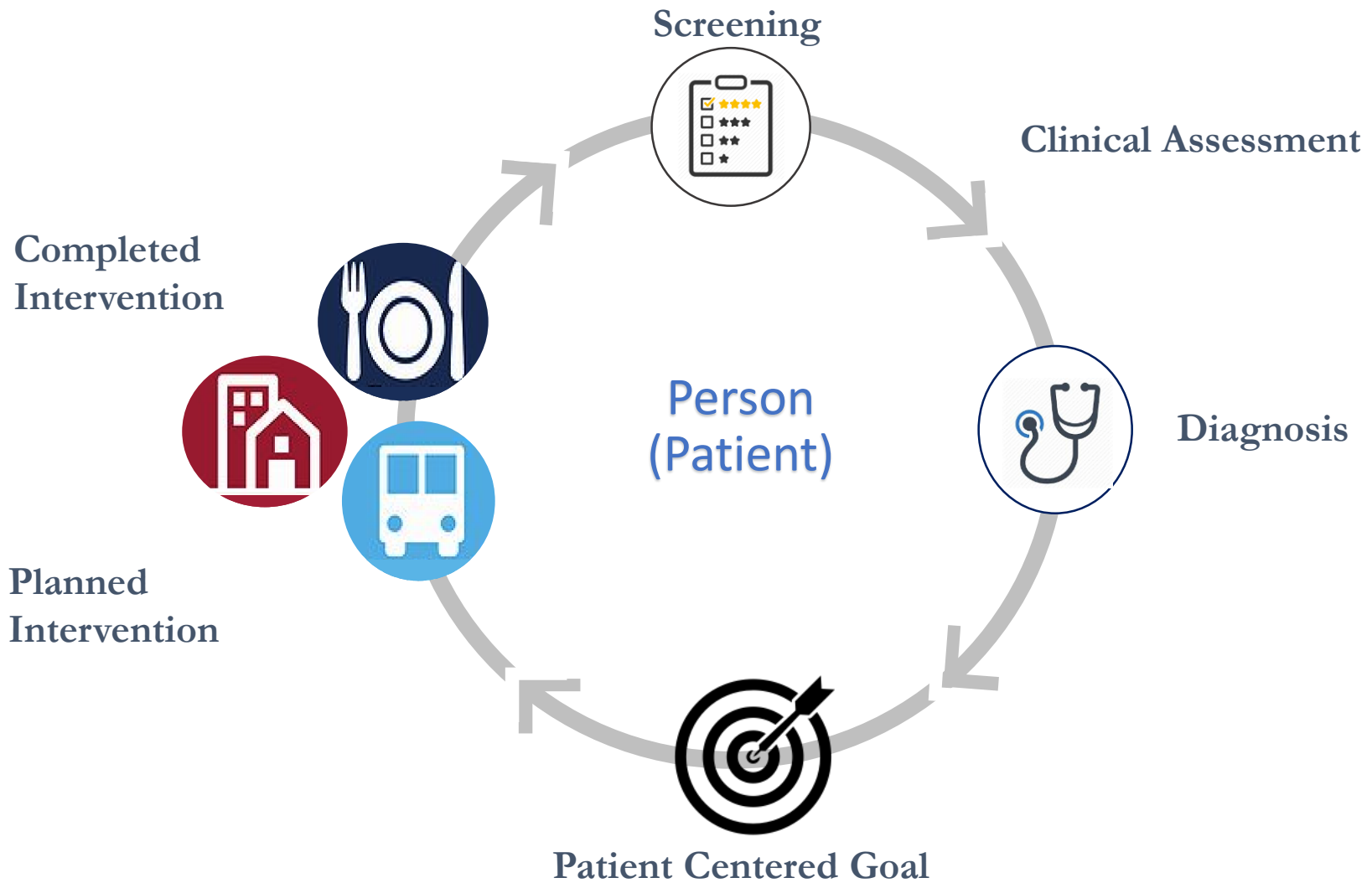
**Submissions Reviewed = 17**

Disposition	Disposition	Disposition	Disposition
Add – 9 Tools/89 Questions	Add – 1		Add - 22
Duplicates – 18 Tools/ 68 Questions	Duplicates – 19	Duplicate – 3	Duplicates – 76 Synonymous - 21
Do Not Add – 16 Tools/72 Questions	Do Not Add – 6	Do Not Add - 2	Do Not Add – 4
<b>Info Needed – 2 Tools/3 Questions</b>	<b>Info Needed - 4</b>		<b>Info Needed - 18</b>
Park - 2 Tools/ 4 Questions	Park - 2		Park - 2

**Total Submissions Returned\* = 8**

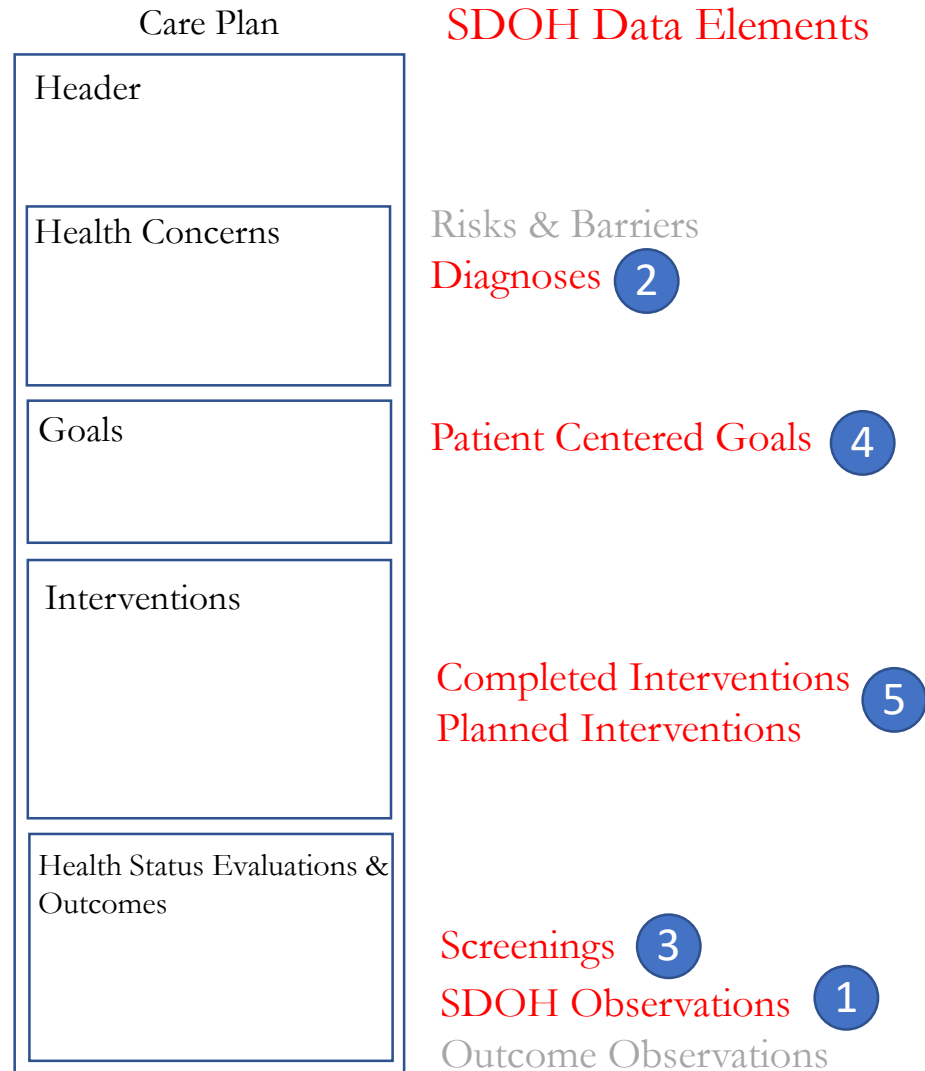
\* Adjudication completed and file returned to submitter with dispositions

# Conceptual Framework





# Incremental Approach to FHIR IG Development



# Enriching the Amount and Type of Patient-Centered Information Available for Sharing Across the Healthcare Ecosystem

Patient Summary*	Encounter Summary**	Referral Note***	SDOH Data Elements
Header	Header	Header	
Health Concerns	Health Concerns	Health Concerns	Risks & Barriers
Problem Section	Problem Section	Problem Section	Diagnoses
Nutrition	Nutrition	Nutrition	Screenings
Social History	Social History	Social History	Clinical Assessment
General Status	General Status	General Status	Patient Centered Goals Outcome Observations
Goals	Goals	Goals	Completed Interventions
Procedures	Procedures	Procedures	Planned Interventions
Plan of Treatment	Plan of Treatment	Plan of Treatment	
Encounters Section			

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

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

\* Continuity of Care Document

# 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

Sep 19 - Nov 19

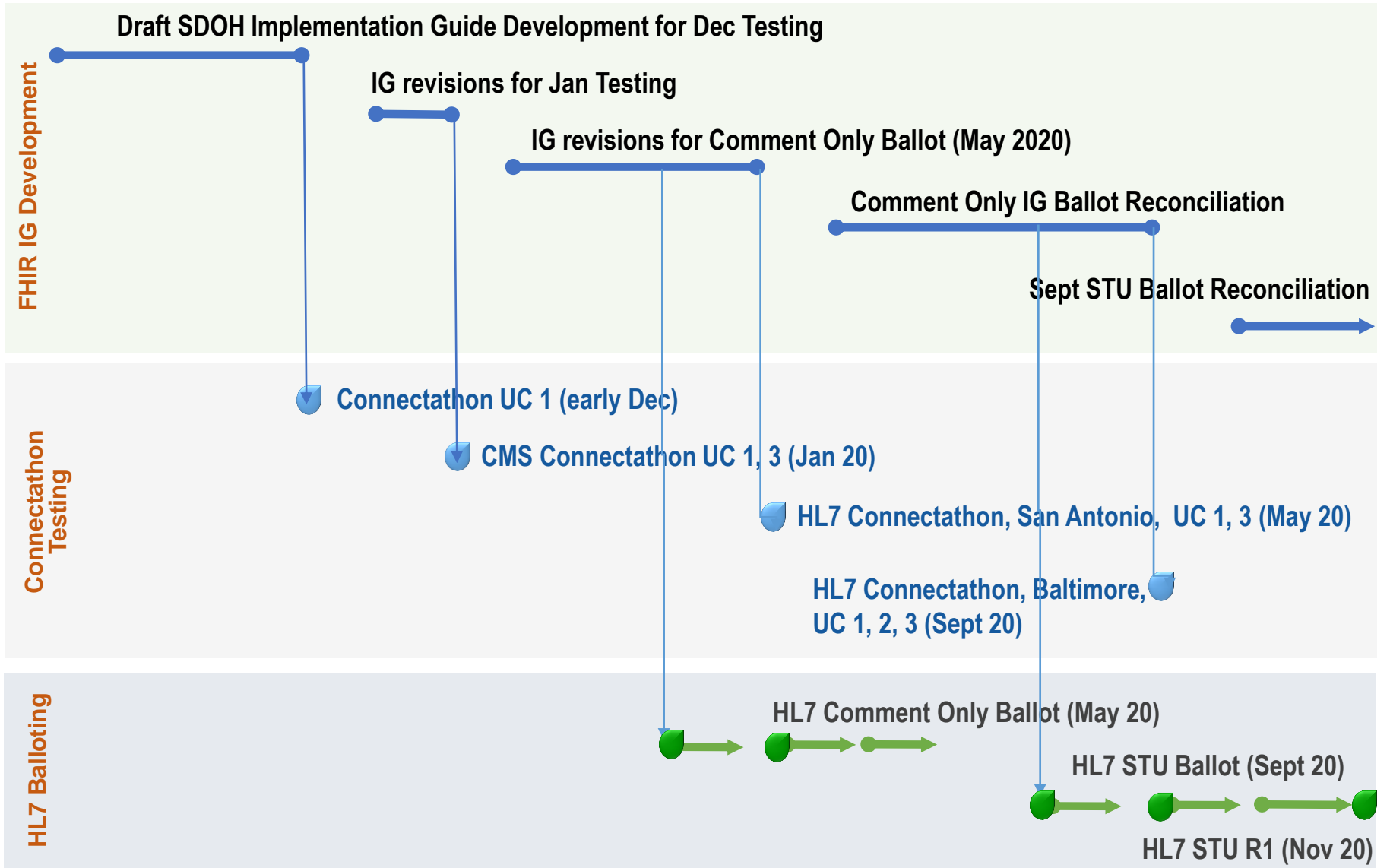
Dec 19 - Jan 20

Feb 20 - May 20

Jun 20 - Aug 20

Sep 20 - Nov 20

### Gravity Project Roadmap (Task 5: HL7 FHIR Integration)



★ FHIR Community Kick-Off Oct 31, 2019

# Questions?

Lisa Nelson: LNelson@max.md

Contact: [gravityproject@emiadvisors.net](mailto:gravityproject@emiadvisors.net)

Join the Gravity Project:

<https://confluence.hl7.org/display/PC/Join+the+Gravity+Project>

# Antitrust Policy

## **ANSI Antitrust Policy**

ANSI neither develops standards nor conducts certification programs but instead accredits standards developers and certification bodies under programs requiring adherence to principles of openness, voluntariness, due process and non-discrimination. ANSI, therefore, brings significant, procompetitive benefits to the standards and conformity assessment community.

ANSI nevertheless recognizes that it must not be a vehicle for individuals or organizations to reach unlawful agreements regarding prices, terms of sale, customers, or markets or engage in other aspects of anti-competitive behavior. ANSI's policy, therefore, is to take all appropriate measures to comply with U.S. antitrust laws and foreign competition laws and ANSI expects the same from its members and volunteers when acting on behalf of ANSI.

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