The Gravity Project

HITAC ISP TF Presentation

Robert Dieterle, Gravity Project Technical Director
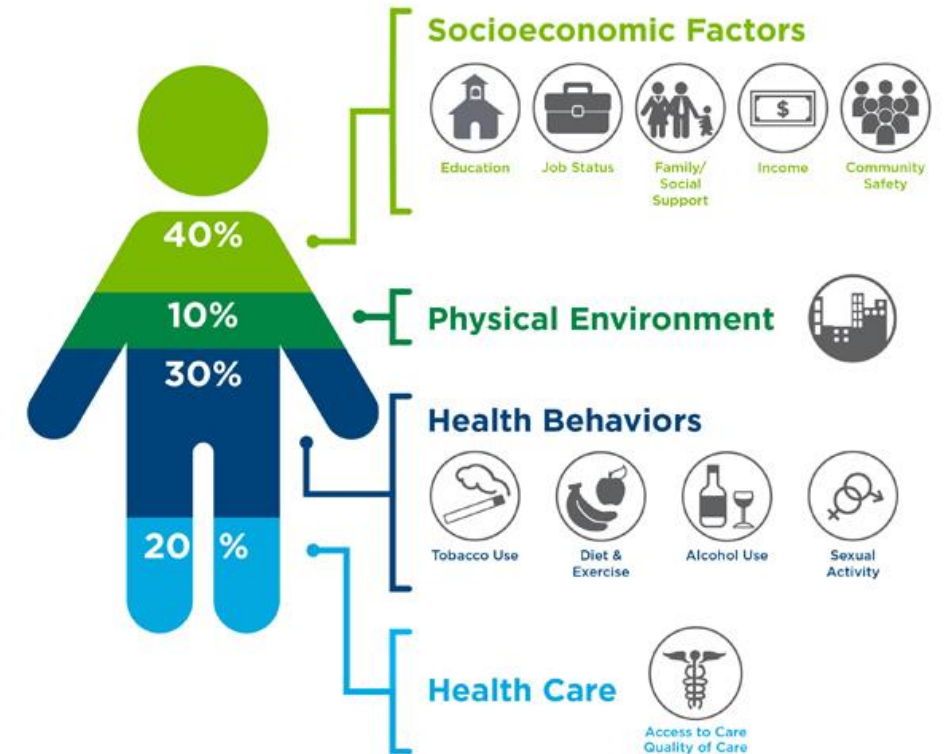
April 8, 2021

Why Social Determinants of Health (SDOH) are Important

There is growing consensus 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

What Goes Into Your Health?

Socioeconomic Factors

Education Job Status Family/Social Support Income Community Safety

40%

10% **Physical Environment**

30% **Health Behaviors**

Tobacco Use Diet & Exercise Alcohol Use Sexual Activity

20%

Health Care

Access to Care
Quality of Care

https://www.bridgespan.org/insights/library/public-health/the-community-cure-for-health-care-(1)

Source: Institute for Clinical Systems Improvement, Going Beyond ... ems (October 2014)

The Bridgespan Group

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Project Scope

In May 2019, the Gravity Project was launched as a multi-stakeholder public collaborative with the goal to develop, 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.

The Gravity Project was initiated by the Social Interventions Research and Evaluation Network (SIREN) with funding from the Robert Wood Johnson Foundation and in partnership with EMI Advisors LLC.

Gravity Project Scope: Develop data and exchange standards to represent patient level SDOH data documented across four clinical activities: screening, assessment/diagnosis, goal setting, and treatment/interventions.

HL7® FHIR® Accelerator Program

- Designed to assist implementers across the health care spectrum in the creation of FHIR Implementation Guides or other informative documents

- Gravity Project became an official Accelerator in August 2019:

http://www.hl7.org/documentcenter/public_temp_3840821C-1C23-BA17-0C64E3ACBE05D630/pressreleases/HL7_PRESS_20190820.pdf

Public Collaboration

Gravity has convened over **1,800+** participants from across the health and human services ecosystem:

- clinical provider groups
- community-based organizations
- standards development organizations
- federal and state government
- payers
- technology vendors

Terminology Public Calls 4-5:30 pm EST every other Thursday
https://confluence.hl7.org/pages/viewpage.action?pageId=46892669#JointheGravityProject-GravityProjectMembershipList

Technical (FHIR IG) Calls 3-4 pm EST every Wednesday
https://confluence.hl7.org/display/GRAV/FHIR+IG+Work+Group+Meetings

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

Gravity PMO Team

- **Evelyn Gallego,** Program Manager, EMI Advisors

- **Carrie Lousberg**, Project Manager, EMI Advisors

- **Mark Savage,** SDOH Policy Lead**,** USCF/SIREN

- **Sarah DeSilvey,** Clinical Informatics Director, University of Vermont

- **Bob Dieterle,** Technical Director, EnableCare

Gravity Overview: Two Streams

Coding Gap Analysis & Recommendations

New Code Submissions

FHIR IG Testing

FHIR IG Development

CODED VALUE SETS

Terminology (SDOH Domains)

Technical (HL7 FHIR)

Data Set Identification

Community & FHIR Coordination

Publication in NLM VSAC & ONC ISA

FHIR IG Ballot & Publication

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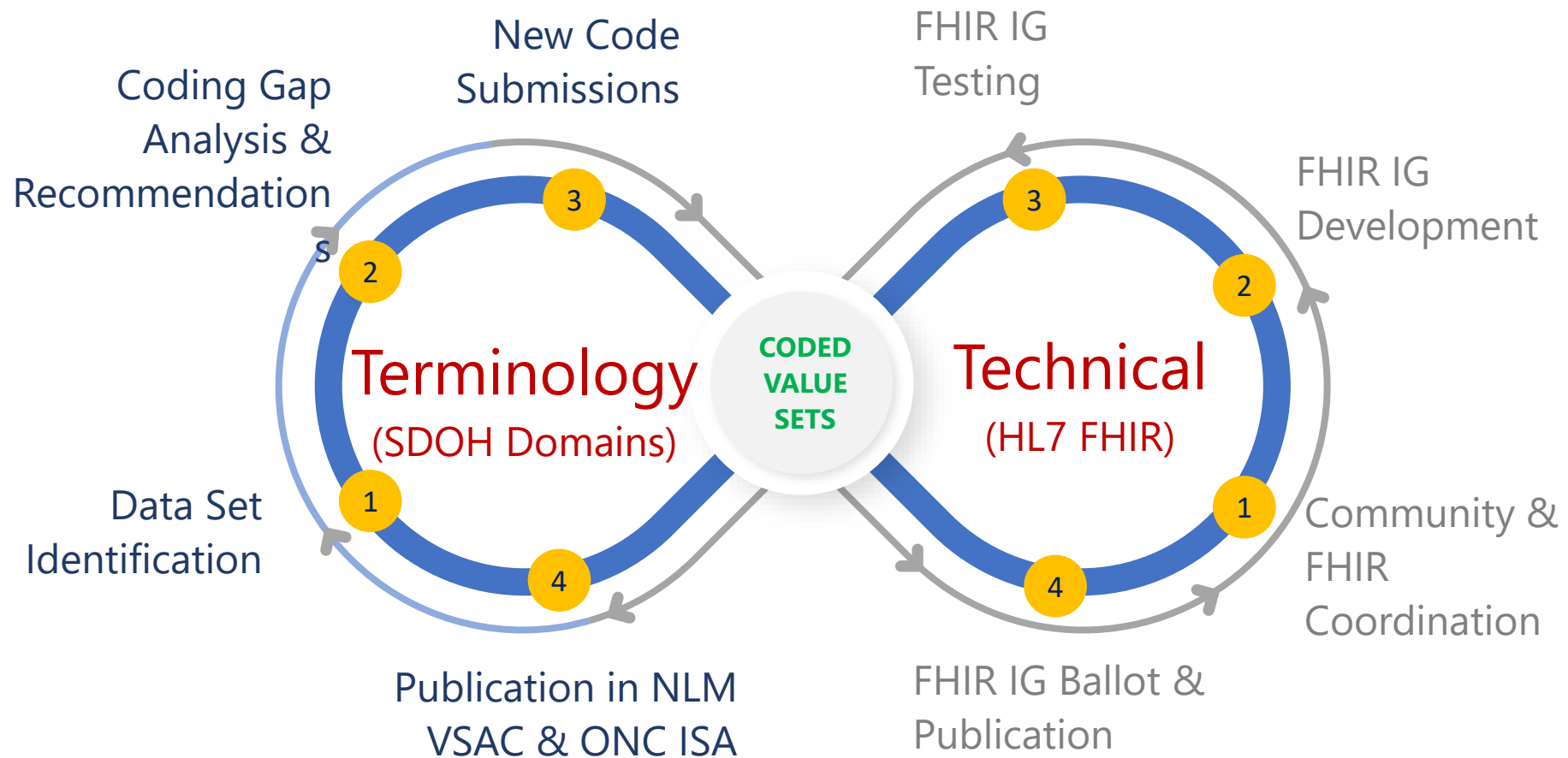
Terminology Workstream

The Gravity Project…

Goal- Develop consensus-driven data standards to support use and exchange of social determinants of health (SDOH) data within the health care sectors and between the health care sector and other sectors.

Terminology Team Collaborative Structure

- Clinical and Process Insight
- Terminology and Taxonomy Insight
- Literature and Evidence
- Risk r/t Health Outcomes
- Practical Fit
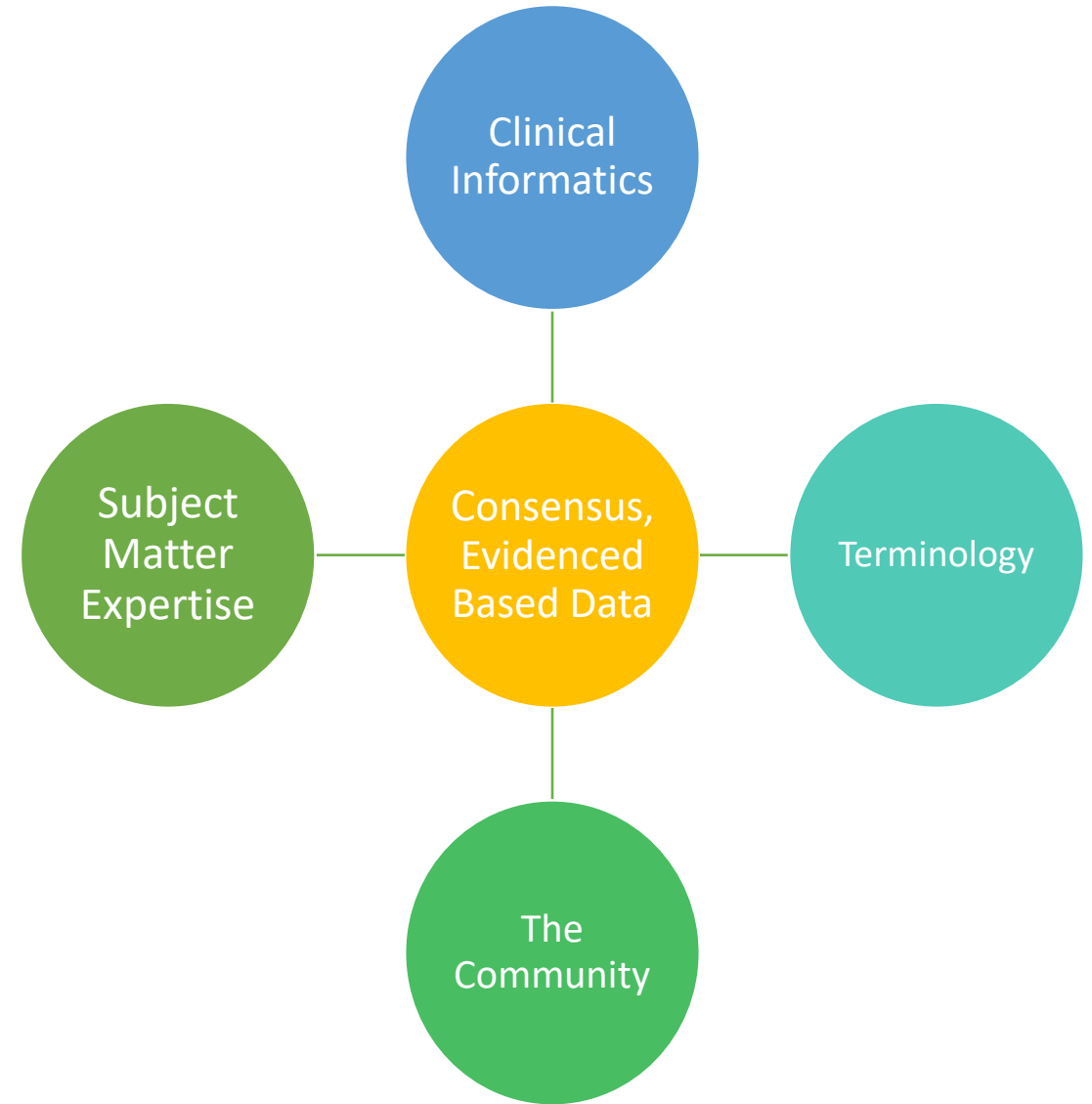
Terminology Stream

Domain	Terminology Identification				Code Submission		Value Set Publication
	Plan	Gather	Review	Finalize	Submit	Finalize	
Food Insecurity	🟢	🟢	🟢	🟢	🟢	🟡	⚪
Housing Instability/ Homelessness	🟢	🟢	🟢	🟢	🟢	🟡	⚪
Inadequate Housing	🟢	🟢	🟢	🟢	🟢	🟡	⚪
Transportation	🟢	🟢	🟢	🟢	🟡	⚪	⚪
Financial Strain	🟢	🟢	🟢	🟢	🟡	⚪	⚪
Demographics	🟢	🟩	🟩	🟩	🟡	⚪	⚪
Material Hardship	🟢	🟡	🟡	🟡	🟡	⚪	⚪
Stress	🟢	🟡	🟡	🟡	⚪	⚪	⚪
Intimate Partner Violence	🟢	🟡	🟡	🟡	⚪	⚪	⚪
Social Isolation	🟢	🟡	🟡	🟡	⚪	⚪	⚪

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Where to find Published Gravity Data Sets?

ICD-10 CM Submission & March 10th Presentation

CDC

CENTERS FOR DISEASE™
CONTROL AND PREVENTION

ICD-10 Coordination and Maintenance Committee Meeting

Diagnosis Agenda

Zoom Webinar and Dial-In Information

• This meeting will be conducted via Zoom Webinar. The URL to join the Zoom Webinar, the password, and the call-in numbers are the same for both days of the meeting

• Day 1: March 9, 2021: The meeting will begin promptly at 9:00 AM ET and will end at 5:00 PM ET. Lunch will be held from 12:30 PM to 1:30 PM.

• Day 2: March 10, 2021: The meeting will begin promptly at 9:00 AM ET and will end at 5:00 PM ET. Lunch will be held from 12:30 PM to 1:15 PM.

https://www.cdc.gov/nchs/data/icd/March-2021-proposal-packet-508.pdf

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ICD-10 Coordination and Maintenance Committee Meeting
March 9-10, 2021

Z59 Problems related to housing and economic circumstances
    Excludes2: problems related to upbringing (Z62.-)

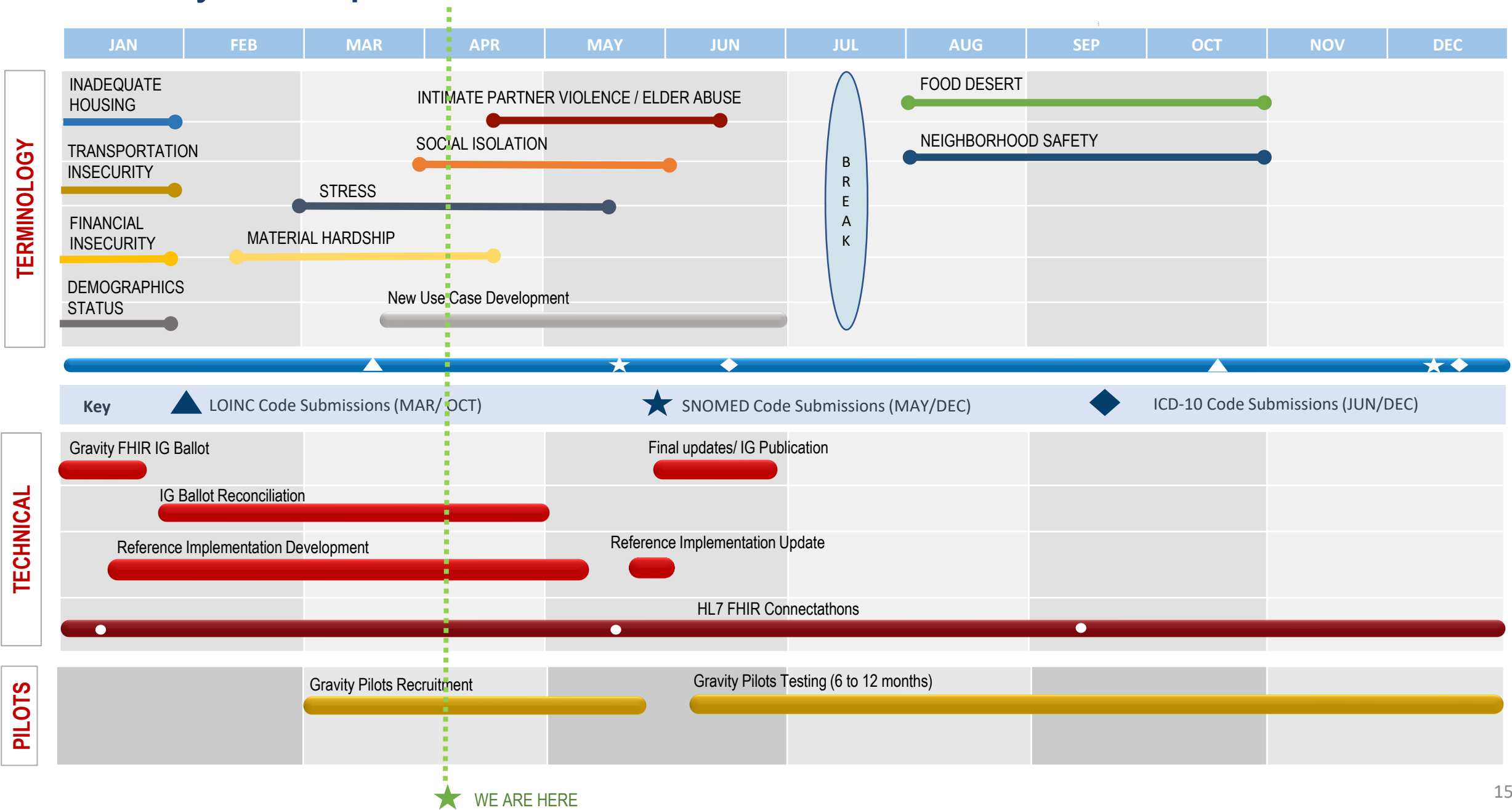|	
New subcategory	Z59.0 Homelessness
New code	Z59.00 Homelessness unspecified
New code	Z59.01 Sheltered homelessness
Add	Doubled up
Add	Living in a shelter such as: motel, temporary or transitional living situation, scattered site housing
New code	Z59.02 Unsheltered homelessness
Add	Residing in place not meant for human habitation such as: cars, parks, sidewalk, abandoned buildings
Add	Residing on the street
Revise	Z59.4 Lack of adequate food ~~and safe drinking water~~
Delete	~~Inadequate drinking water supply~~
	Excludes1: effects of hunger (T73.0)
	inappropriate diet or eating habits (Z72.4)
	malnutrition (E40-E46)
New code	Z59.41 Lack of adequate food
Add	Inadequate food
Add	Lack of food
New code	Z59.42 Food insecurity
	Z59.8 Other problems related to housing and economic circumstances
	Foreclosure on loan
	Isolated dwelling
	Problems with creditors
New sub subcategory	Z59.81 Housing instability, housed
Add	Past due on rent or mortgage
Add	Unwanted multiple moves in the last 12 months
New code	Z59.811 Housing instability, housed, with risk of homelessness
Add	Imminent risk of homelessness
New code	Z59.812 Housing instability, housed, homelessness in past 12 months

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2021 Gravity Roadmap

TERMINOLOGY

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |

- INADEQUATE HOUSING
- INTIMATE PARTNER VIOLENCE / ELDER ABUSE
- FOOD DESERT
- TRANSPORTATION INSECURITY
- SOCIAL ISOLATION
- NEIGHBORHOOD SAFETY
- STRESS
- FINANCIAL INSECURITY
- MATERIAL HARDSHIP
- DEMOGRAPHICS STATUS
- New Use Case Development
- BREAK

Key ▲ LOINC Code Submissions (MAR/ OCT)   ★ SNOMED Code Submissions (MAY/DEC)   ◆ ICD-10 Code Submissions (JUN/DEC)

TECHNICAL

- Gravity FHIR IG Ballot
- Final updates/ IG Publication
- IG Ballot Reconciliation
- Reference Implementation Development
- Reference Implementation Update
- HL7 FHIR Connectathons

PILOTS

- Gravity Pilots Recruitment
- Gravity Pilots Testing (6 to 12 months)

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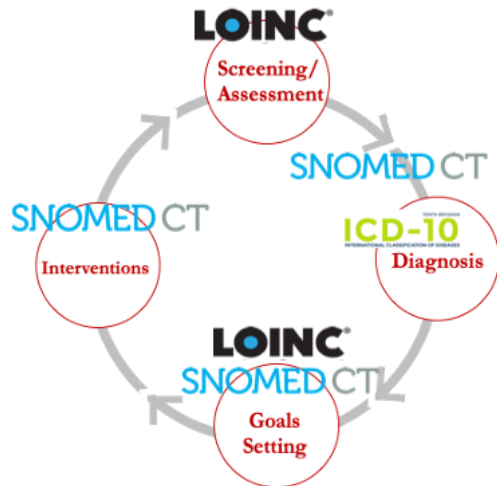# Accelerating Adoption Using Nationally Recognized Standards

Consensus Approved SDOH Data Elements

Coded SDOH Data Elements

Image Source: HL7 Da Vinci Project Community Roundtable Nov. 18, 2020
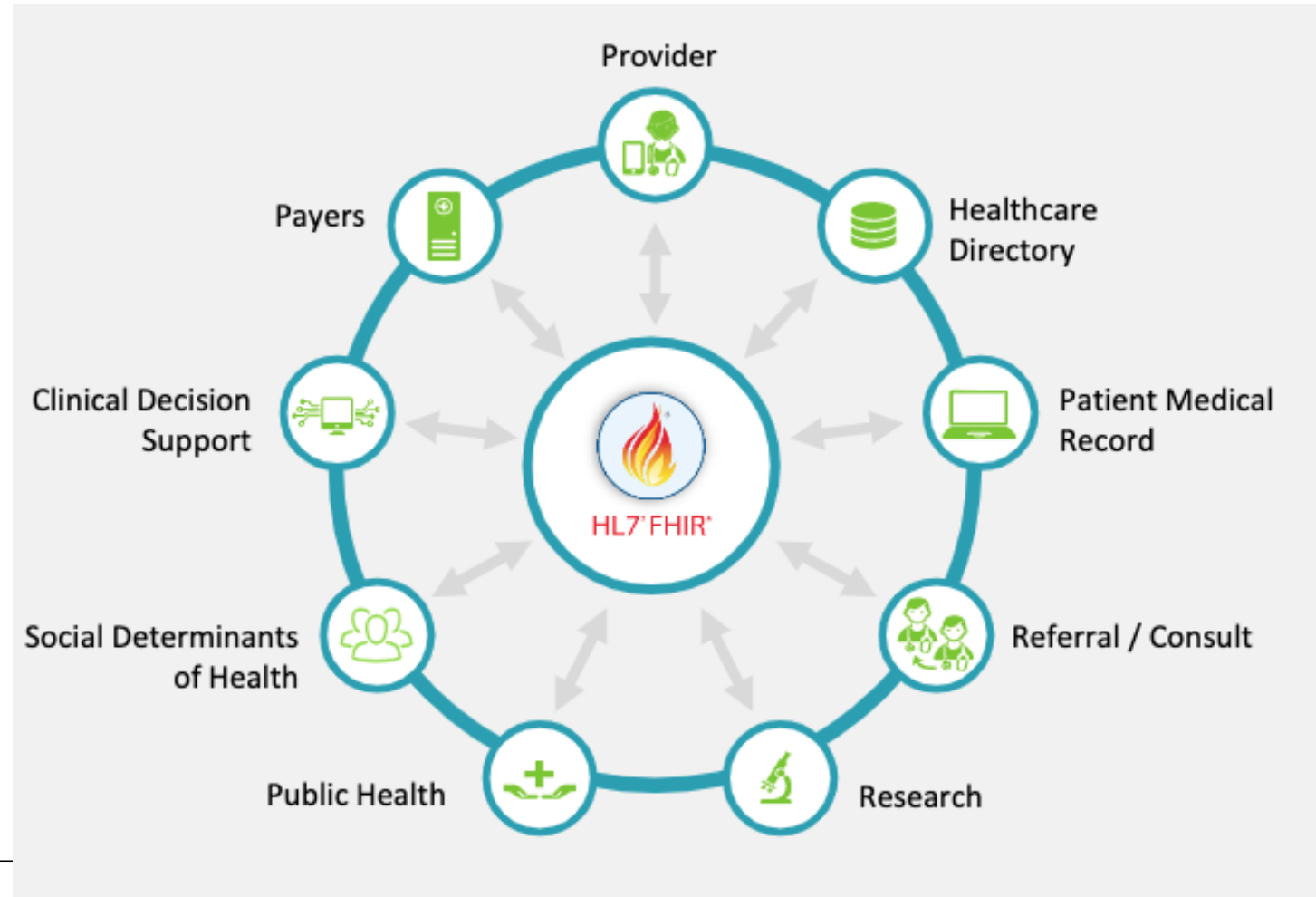
Technical Workstream

Technical Stream – SDOH Clinical Care FHIR Implementation Guide

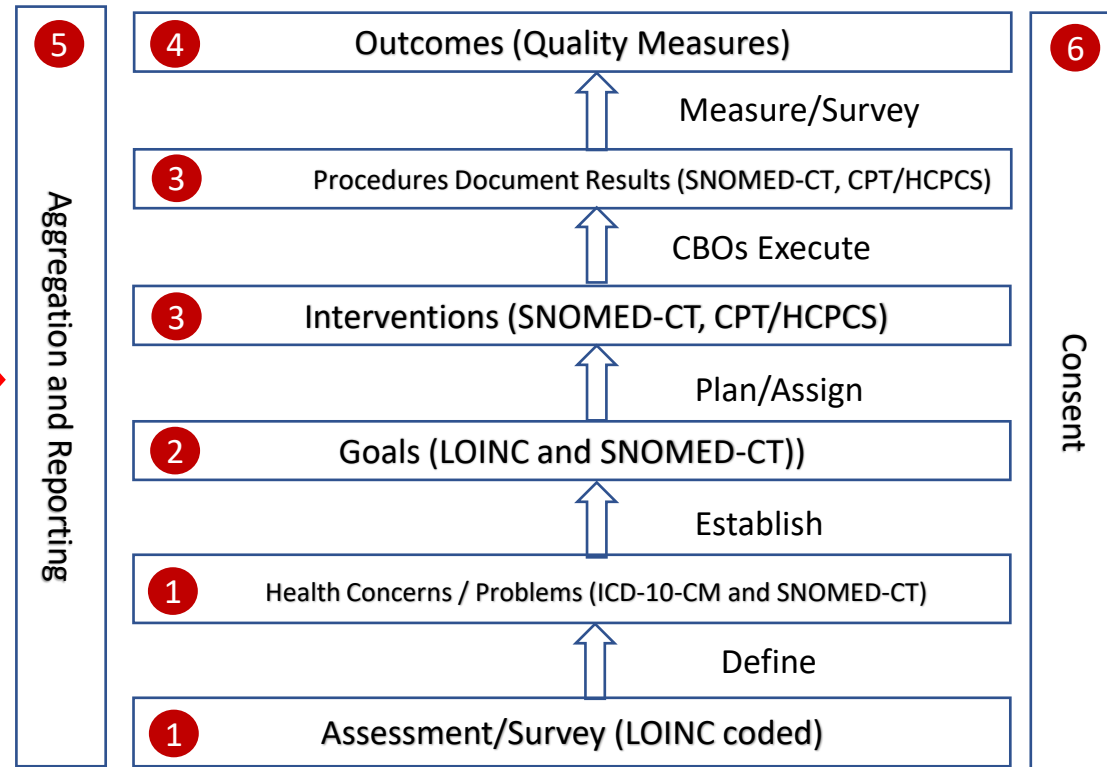1. The SDOH Clinical Care IG is a framework Implementation Guide (IG) and supports multiple domains

2. The IG supports the following clinical activities
   - Assessments
   - Health Concerns / Problems
   - Goals
   - Referrals
   - Consent
   - Aggregation for exchange/reporting

3. Completed January 2021 ballot as a Standard for Trial Use Level 1 (STU1)

   http://hl7.org/fhir/us/sdoh-clinicalcare/2021Jan/

Gravity FHIR SDOH Clinical Care IG Scope

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 management, quality reporting, and risk adjustment/ risk stratification).

6. Manage patient consent

Aggregation and Reporting (5)

Consent (6)

4 Outcomes (Quality Measures)	
Measure/Survey	
3 Procedures Document Results (SNOMED-CT, CPT/HCPCS)	
CBOs Execute	
3 Interventions (SNOMED-CT, CPT/HCPCS)	
Plan/Assign	
2 Goals (LOINC and SNOMED-CT))	
Establish	
1 Health Concerns / Problems (ICD-10-CM and SNOMED-CT)	
Define	
1 Assessment/Survey (LOINC coded)	

http://build.fhir.org/ig/HL7/fhir-sdoh-clinicalcare/

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Enabling Survey Instruments

Survey → LOINC Panel (Survey Instruments)
Include
Health Concern Algorithm

Establish complete survey as LOINC Components with LOINC Answer Lists
Add calculation logic for Questionnaire

Conversion to FHIR Questionnaire
(enhanced NLM LHC-Forms Widget)

Build executable FHIR Questionnaire with logic to create LOINC-LOINC Observations and SNOMED-CT/ICD10-CM Health Concerns

Execute FHIR Questionnaire
(enhanced NLM SDC Questionnaire App)

QuestionnaireResponse

Observation
(survey question-answer pair

Condition
Health Concern

Provider Evaluation

Condition
Problem/ Diagnosis

Goals
Interventions

Other "clinical" findings

Value Sets – based on SDOH Domain Definitions
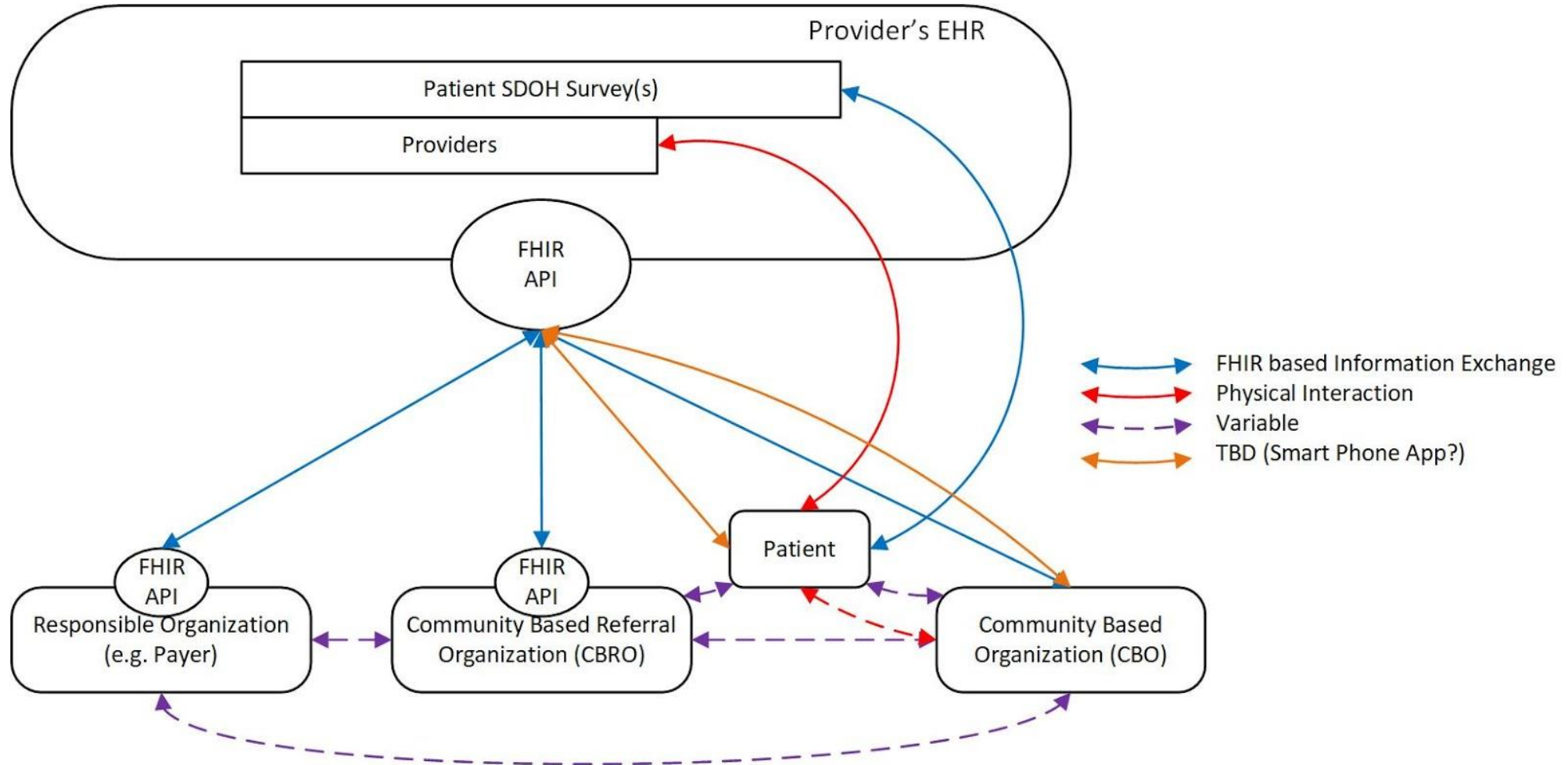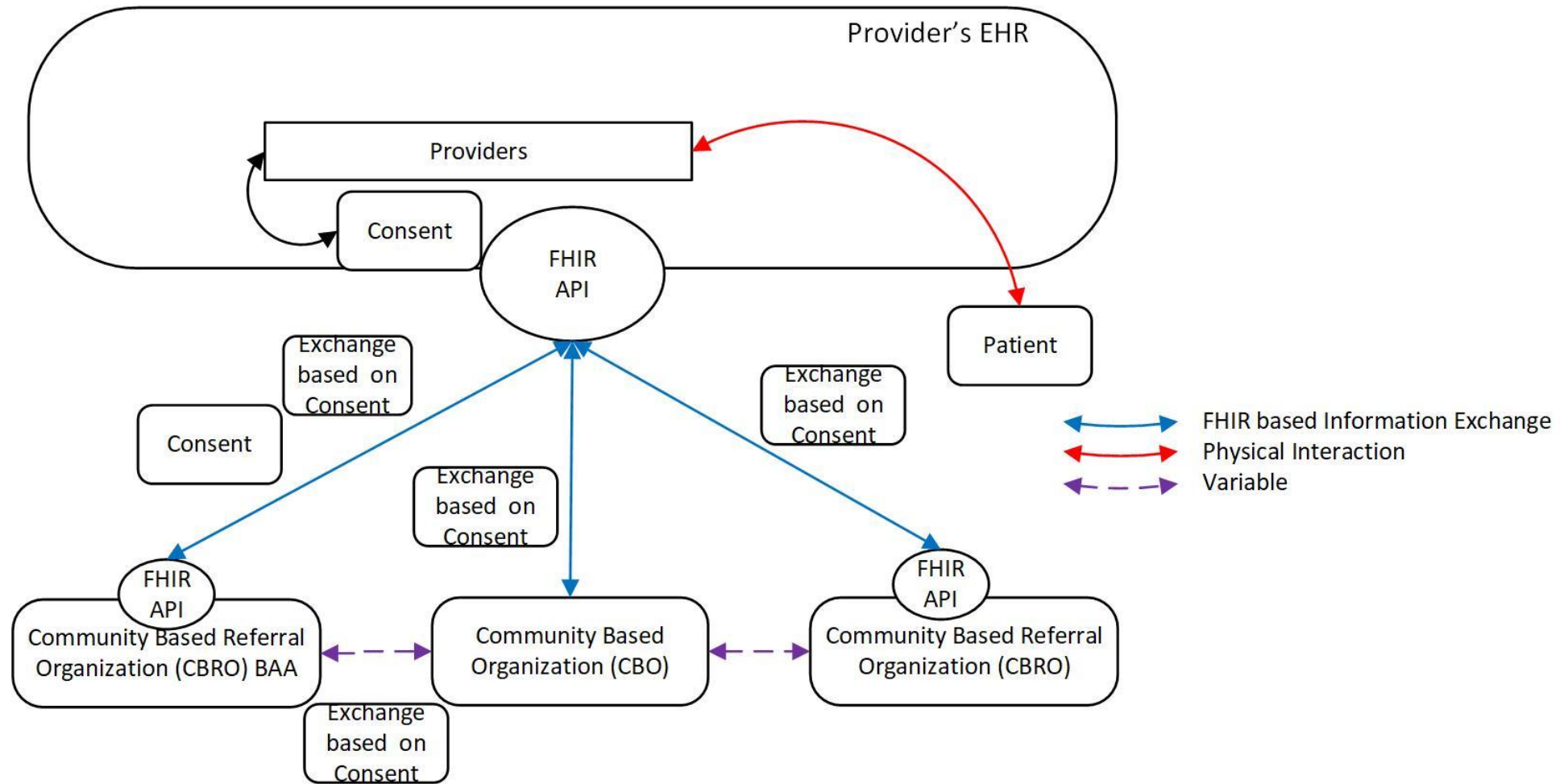
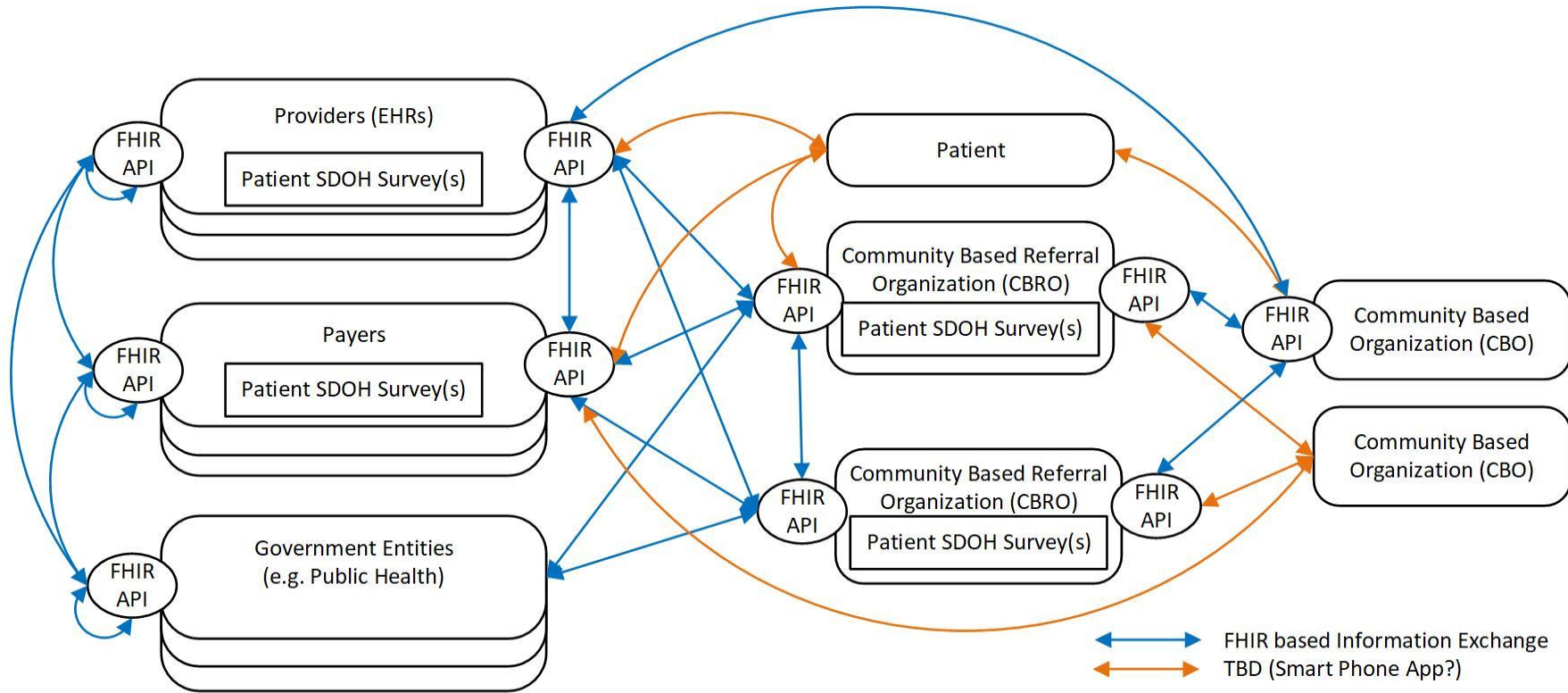Note: Survey instruments typically generate Health Concerns with Gravity defined value sets

Enabling SDOH Interactions/ Workflow (Initial exchanges)

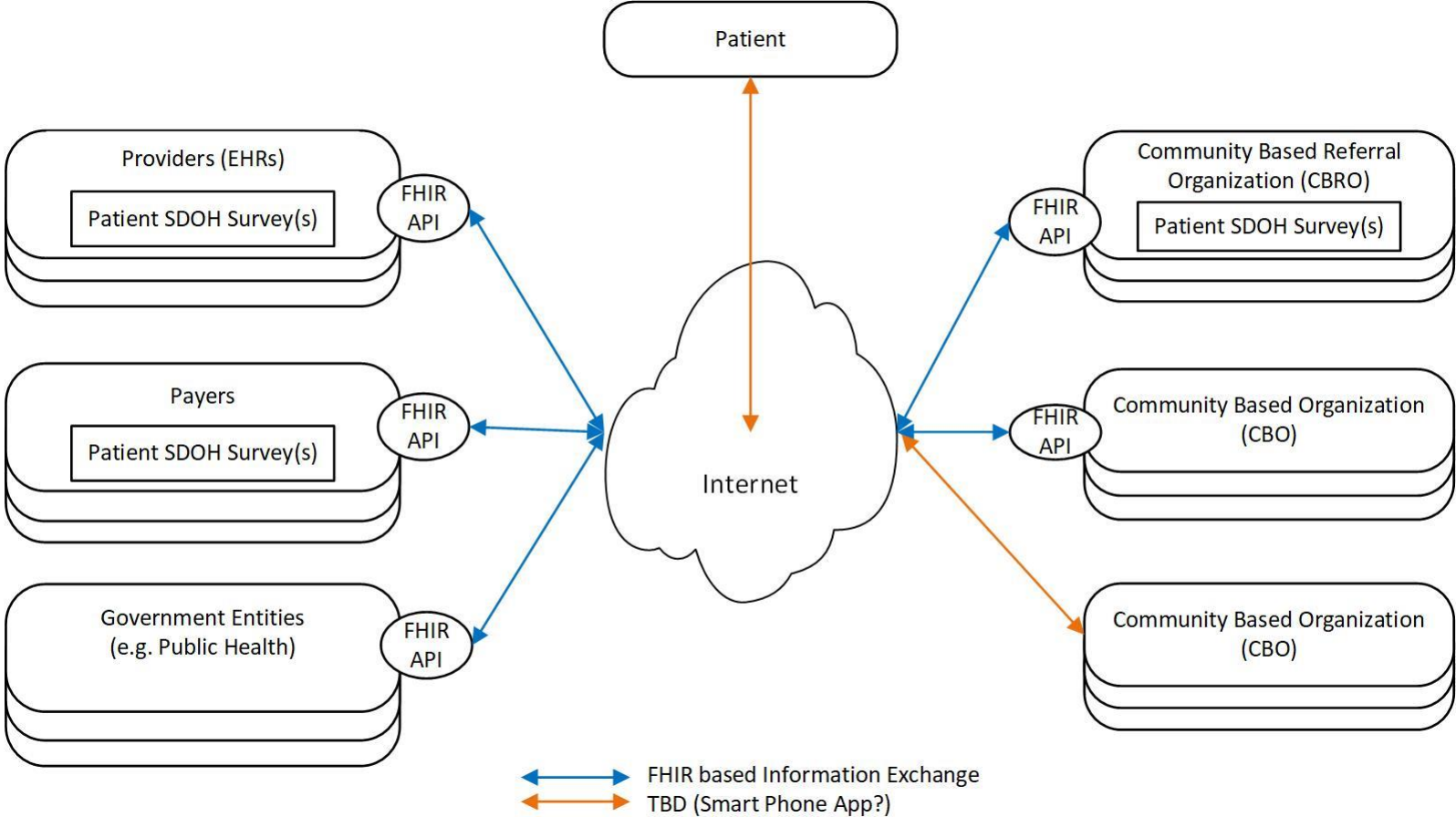# Consent exchange for SDOH Clinical Care IG
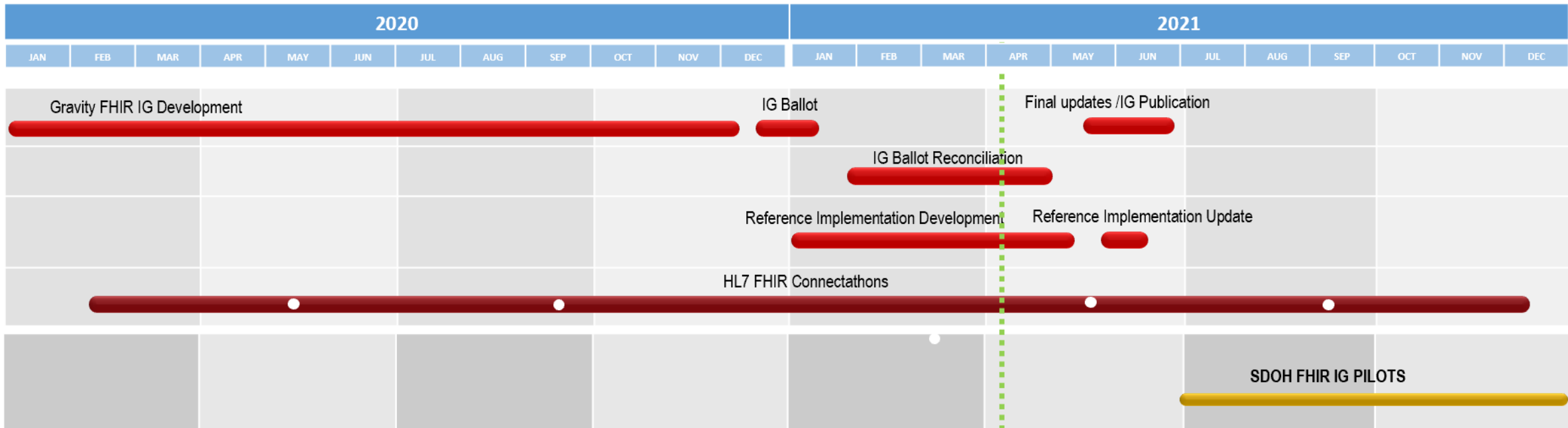
Expanded workflow guidance for other actors

Note: Where two FHIR APIs are shown, it is for drawing simplicity and not a technical requirement

Simplified interaction picture

Results from the January SDOH Clinical Care IG Ballot

Results of ballot voting

- Affirmative 63
- Negative 30
- Abstain 56
- No Vote 43
- Total 192

The ballot met the **60%** threshold required to publish as an STU

Ballot comments submitted

- Total ballot comments 227
- Total negative comments 72
- Total affirmative comments 155

Note: Affirmative comments include typos, questions, suggestions, comments

Ballot Reconciliation Status

- The ballot reconciliation process started on 2/7/2021 and is expected to continue until the end of April.
- As of 4/7/2021 161 of the 227 ballot comments have dispositions - 66 to go

| 2020 | 2021 |

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |

TECHNICAL

- Gravity FHIR IG Development
- IG Ballot
- Final updates /IG Publication
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PILOTS

- SDOH FHIR IG PILOTS

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What's Next?

- Work with NLM, Regenstrief and other stakeholders to advance tooling that supports the multi-domain Gravity IG, externally maintained value sets, and questionnaires

- Work with the community to establish the clinical content required for multiple SDOH domains

- Advance development of the reference implementation

- Incorporate dispositions from January 2021 ballot comments

- Preparation for the May HL7 Connectathon

- Please join us every **Wednesday from 3 to 4 pm ET.** Meeting details and agendas available here: https://confluence.hl7.org/display/GRAV/FHIR+IG+Work+Group+Meetings

How to Engage

- Join the Gravity Project: https://confluence.hl7.org/display/GRAV/Join+the+Gravity+Project
  - Public Collaborative Workgroup meets bi-weekly on **Thursdays' 4:00 to 5:30 pm ET**
  - SDOH FHIR IG Workgroup meets weekly on **Weds. 3:00 to 4:00 pm ET**

- Help us find new sponsors and partners

- Joint us at the HL7 May Connectathon Gravity SDOH Track (watch the Gravity Project Confluence site for signup instructions)

- 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
  - @the gravityproj
  - https://www.linkedin.com/company/gravity-project
  - Partner with us on development of blogs, manuscripts, dissemination materials

Questions?

Robert Dieterle

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CEO EnableCare LLC

rdieterle@enablecare.us

Additional questions? Contact: gravityproject@emiadvisors.net

@thegravityproj

https://www.linkedin.com/company/gravity-project

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