COMMUNITY AND CLINICAL DATA INITIATIVE

CODI Overview

May 2025

MITRE | CMS Alliance to Modernize Healthcare

Purpose

This presentation provides an overview of CODI by addressing the following topics:

- Introduce the CODI Model
- Review CODI Model implementations and data sharing approaches
- Describe CODI resources
- Outline the implementation of the HIE-centric approach
- Discuss the enduring value of a CODI implementation

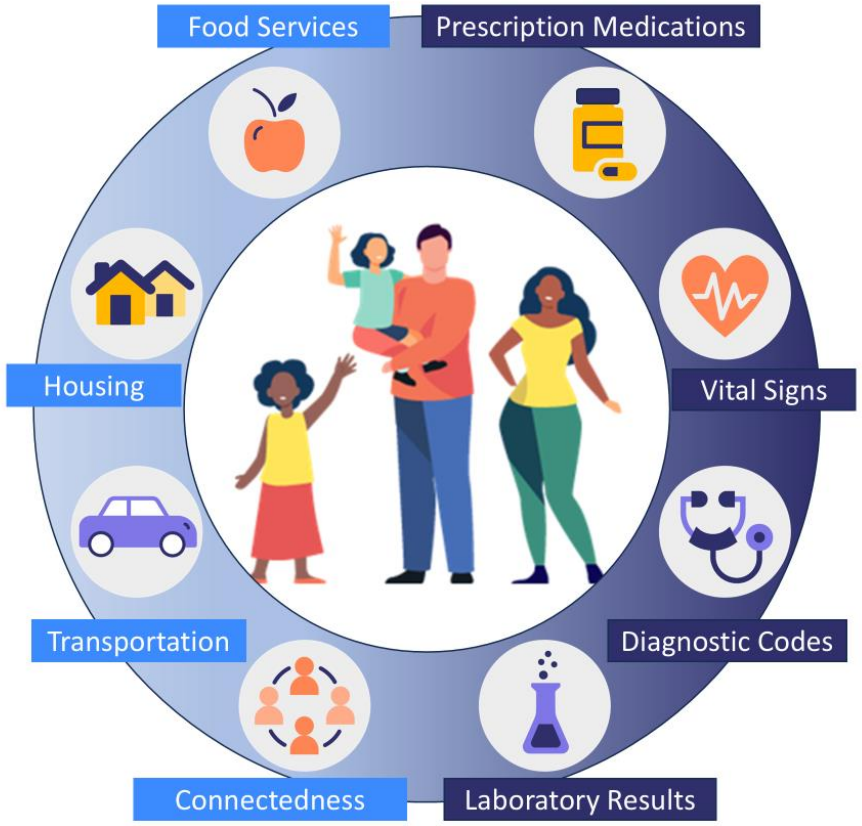
What is the challenge?

A complete picture of a person's health relies on comprehensive data that brings together the clinical care they receive, and the complementary services and programs provided by community-based organizations (CBOs) or government agencies.

The current health data ecosystem often excludes non-clinical data. Data from CBOs or government agencies is fragmented across many organizations in siloed information systems.

What is the Community and Clinical Data Initiative (CODI)?

- **CODI is a Model to harmonize community and clinical data to create a complete picture of a person's health for:**
  - Research
  - Quality Improvement
  - Evaluation
  - Public Health
- The CODI Model is publicly available and free to use. Open-source resources to support implementation and adoption are posted to the web. *See slide 10.*

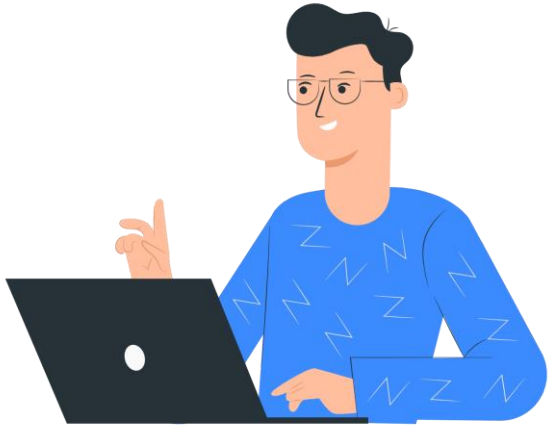


CODI can be implemented by any community interested in addressing the siloed health information landscape to better understand the impact of community programs and services on population health outcomes.

Who benefits from a CODI implementation?

Community-Based Organization

Measure and advocate for the programs and services that drive meaningful change



Health Information Exchange (HIE)

Gain visibility into CBO-reached populations and improve capabilities to link persons across diverse data sources

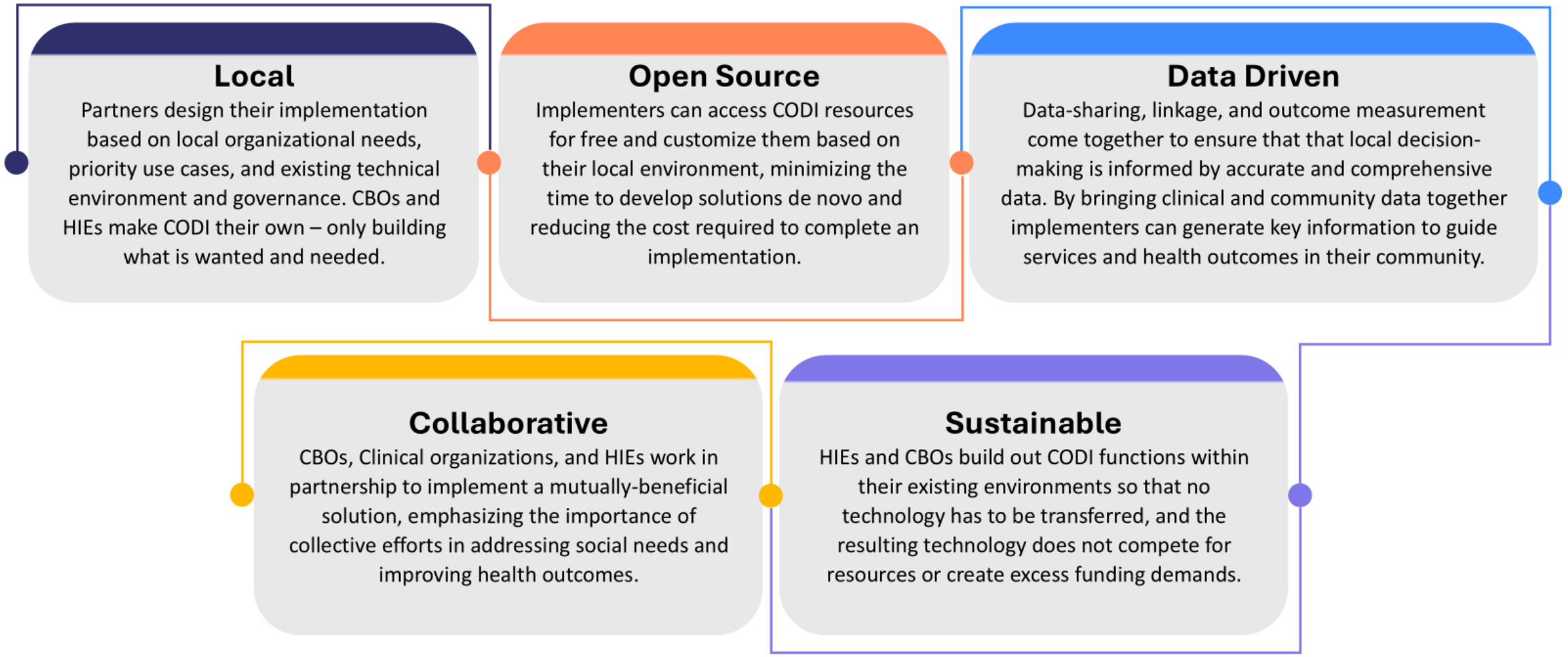
Healthcare Provider

Improve understanding of which programs and services reach which patients & resulting outcomes

Policy Maker

Increase awareness of opportunities to improve health through strategic investment in services and programs

What values guide CODI adoption and implementation?



How has CODI been implemented?

CODI has been implemented in 3 locales. Each implementation has engaged different partners and has focused on different health outcomes, highlighting how the CODI model can be applied to any health topic and implemented in any community.

Focus	Childhood Obesity	Chronic Disease	Health Promotion
Where?	Colorado	North Carolina	Maryland
For What?	Research & Public Health	Research	Program Evaluation
Types of Implementing Partners	• Girls on the Run • Hunger Free Colorado	• Parks and Recreation Organizations • YMCA • Homeless Service Organization	• Area Agency on Aging • Meals on Wheels

Each implementation has identified lessons learned that can make future implementations easier.

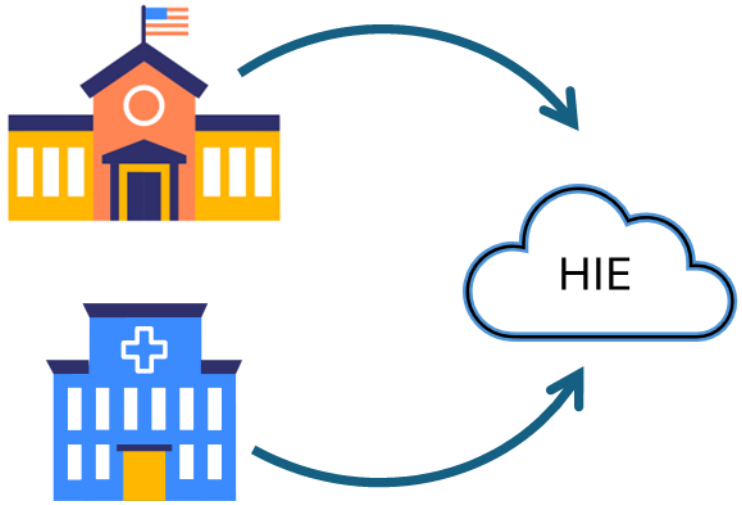
What data sharing approaches have been implemented?

Over time, the CODI Model has evolved to include two data sharing approaches: a **distributed network** or an **HIE-centric design**. Resources are available to support both approaches.

Data Sharing Approach	Distributed Network	HIE-Centric
Applicable Implementation(s)	Colorado and North Carolina	Maryland
HIE partner required?	No	Yes
Benefits	Links persons without sharing identifiers and data stays with each data contributor	Limited technical build, faster implementation, and lower implementation costs
Challenges	Time to establish data governance and sustainability costs	HIE translation of the CODI Model

Three implementations have demonstrated that implementing the HIE-centric approach is faster, has lower costs and is more likely to be sustained.

What approach is recommended if both are possible in my community?



Based on lessons learned during implementations, the HIE-centric approach to data sharing is recommended, when possible, for future implementers because:

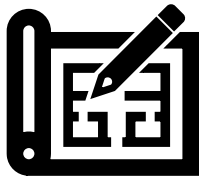
- ✓ HIE's have clinical data from healthcare providers
- ✓ HIE's have tools and processes to link datasets at the person level
- ✓ HIE's have existing governance agreements and processes to bring CBOs onboard
- ✓ HIE's have reporting tools to visualize the clinical data they hold

These existing capabilities mean that minimal additional technology must be built – reducing the costs to maintain and time to implementation.

The HIE-centric approach also increases the likelihood that the data sharing will be sustained and can easily expand to other partners.

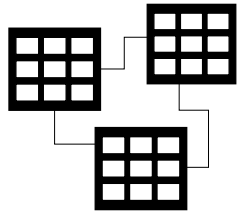
What resources can support a CODI implementation?

The following CODI resources are available to support either approach.



Planning Resources

Guides and resources to help implementers plan and initiate their own CODI.

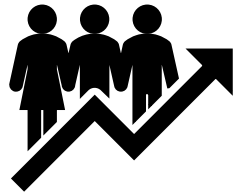


Common Data Model

A common structure and format that integrates data about clinical care with social needs and delivery of social services and programs.

Data Quality Tools

Tools that examine the quality of data.



Local Outputs

Outputs, templates, and examples from successful CODI implementations.

HIE-centric resources available at mitre.github.io/codi/
Distributed Network resources available at https://phii.org/course/codi-toolbox/

Additional resources for a distributed network approach

The following CODI resource types were designed during a distributed network implementation, but some may have more general application.

Use Cases

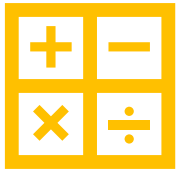
Questions that drive implementation and test the CODI infrastructure.

Governance Model

Rules and resources for data sharing partnerships.

Linkage Tools

Tools to match records containing personal information across organizations.



Data Queries

Tools to examine data quality and queries to retrieve data that answer questions about health outcomes.

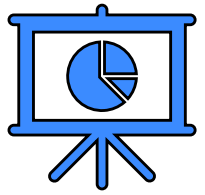
Resources available at https://phii.org/course/codi-toolbox/

Additional resources for an HIE-centric approach

The following CODI resource types were designed during an HIE-centric implementation but may have more general application.

Clinical Outcome Measure Definitions

Measure definitions to calculate the amount of services (dose), diabetes prevalence and control, and hypertension prevalence and control.

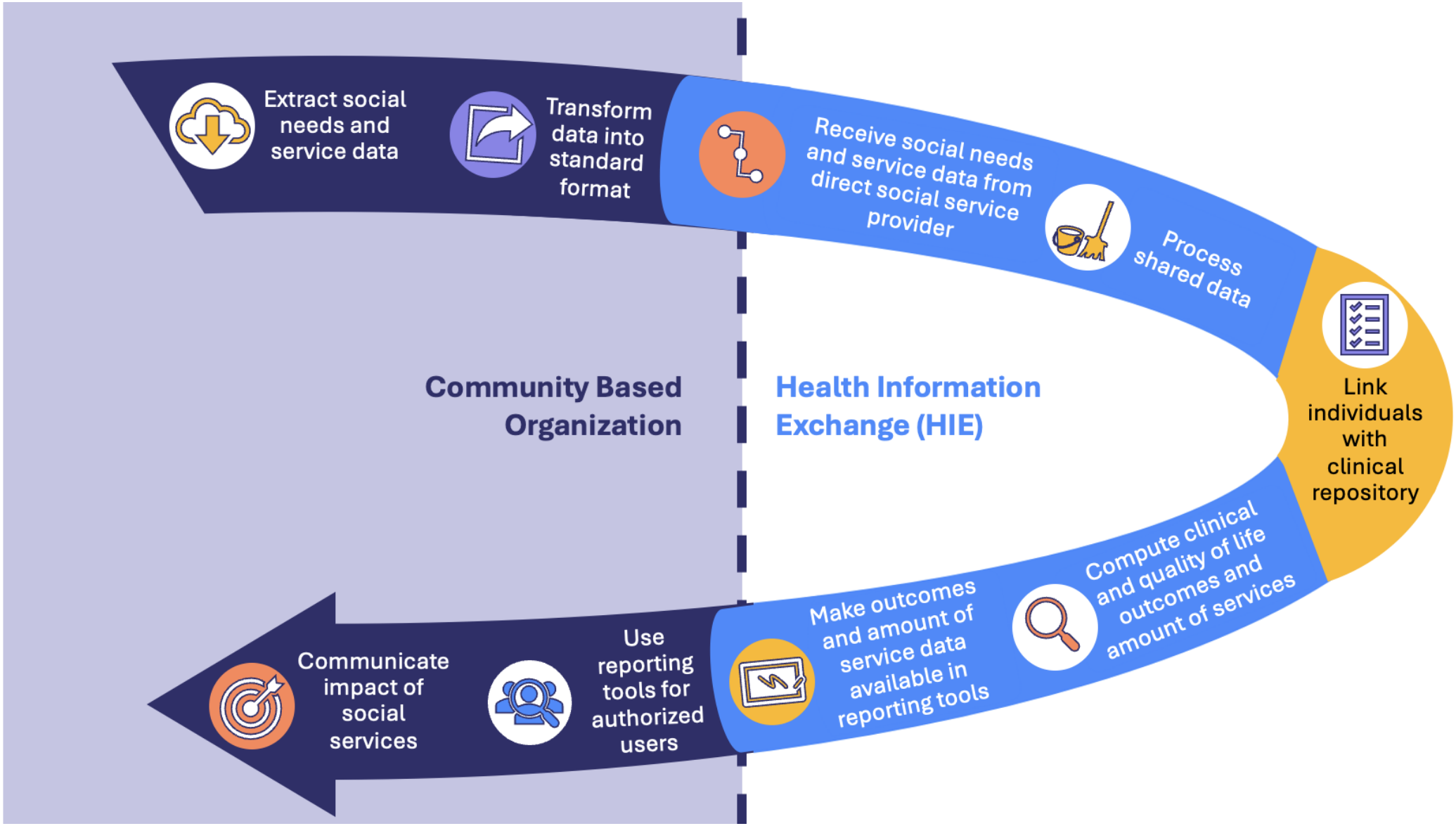


Reporting Requirements and Wireframes

Requirements and example visualizations for presenting the amount of services and outcomes among individuals receiving programs.

Resources available at mitre.github.io/codi/

How does a community implement the HIE-centric approach?



What are the primary implementation workstreams?

Workstreams	Goal	Key Steps
1. Data Model	**Apply CODI Data Model to extract and normalize CBO data**	• CBOs map relevant data attributes to CODI Data Model • HIE translates CODI Data Model to HIE environment • CBOs modifies data collection practices, if needed
2. Data Sharing	**Share data between CBOs and HIE**	• HIE defines standard format for data exchange • CBO extracts data from information systems • CBOs normalize data to format and share with HIE
3. Outcome Measures	**Implement outcome measures to assess priority health topics**	• HIE and CBOs determine outcome measures of interest • HIE validates data availability to calculate measure • HIE implements measure definitions and applies algorithm to clinical data to compute outcomes • CBOs determine how outcome measures will be used in practice
4. Reporting Tools	**Measure the impact of programs and services on selected health outcomes**	• HIE develops reporting tools with clinical and CBO data • CBOs use reporting tools to evaluate outcomes and communicate impacts

CBO implementation process

01

CBOs meet with HIE to learn about a partnership and sign a participation agreement.

JOIN HIE

02

CBOs select which programs and services to share data from, which source systems to pull data from, included population, and time period.

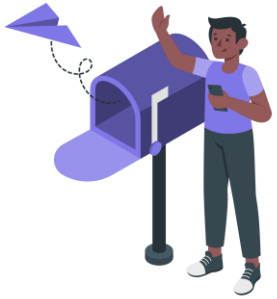
PLAN

03

CBOs work with HIE to determine data format and extract data from source systems based on data sharing plan.

EXTRACT DATA

04



CBOs send social care data to HIE – first a test file and then the full extract.

SHARE DATA

05

HIE process social care data files, links individuals in social care to patients in clinical data, and stores data for use.

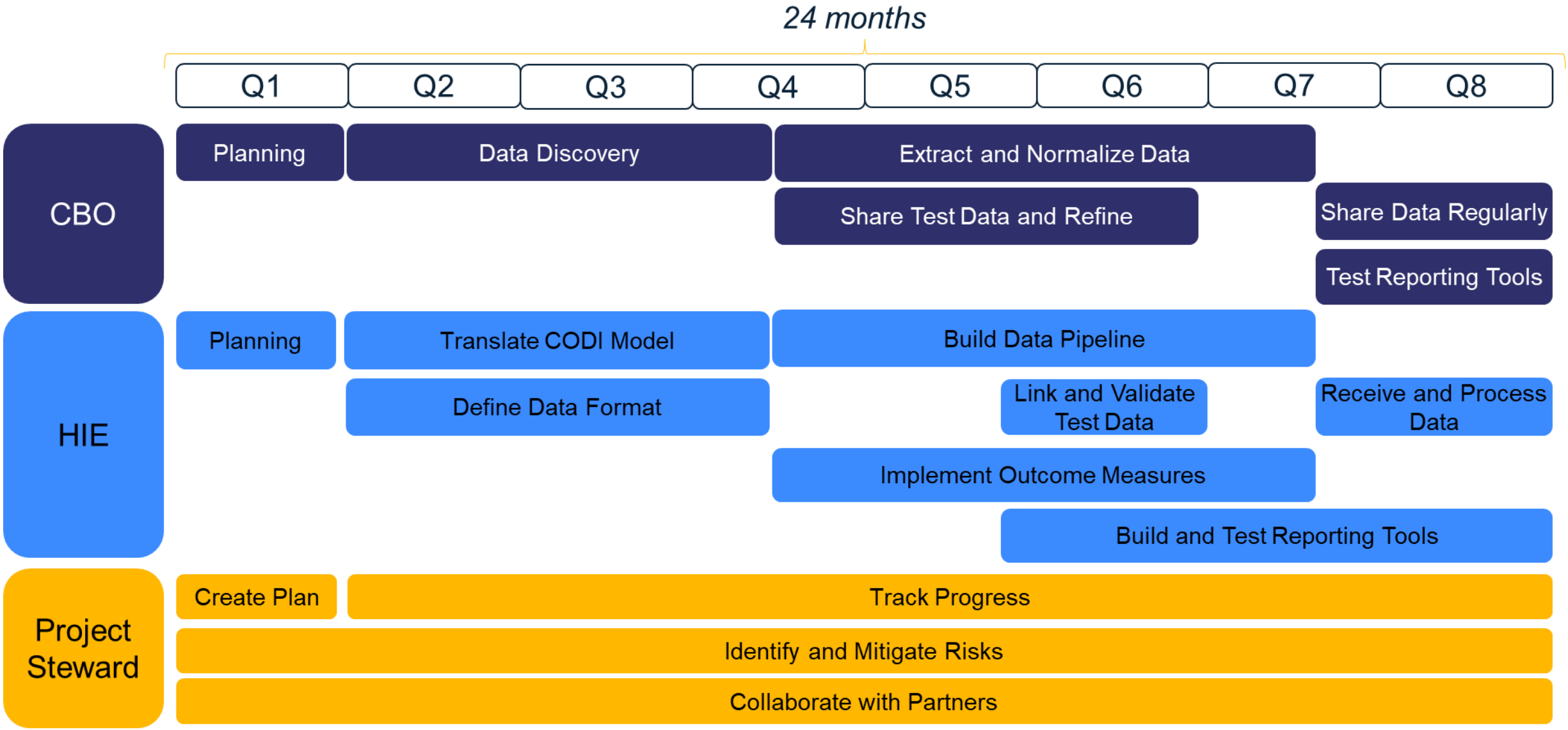
CONNECT DATA

06

CBOs login to secure portal and run reports to visualize demographic data & outcomes for each program.

USE DATA

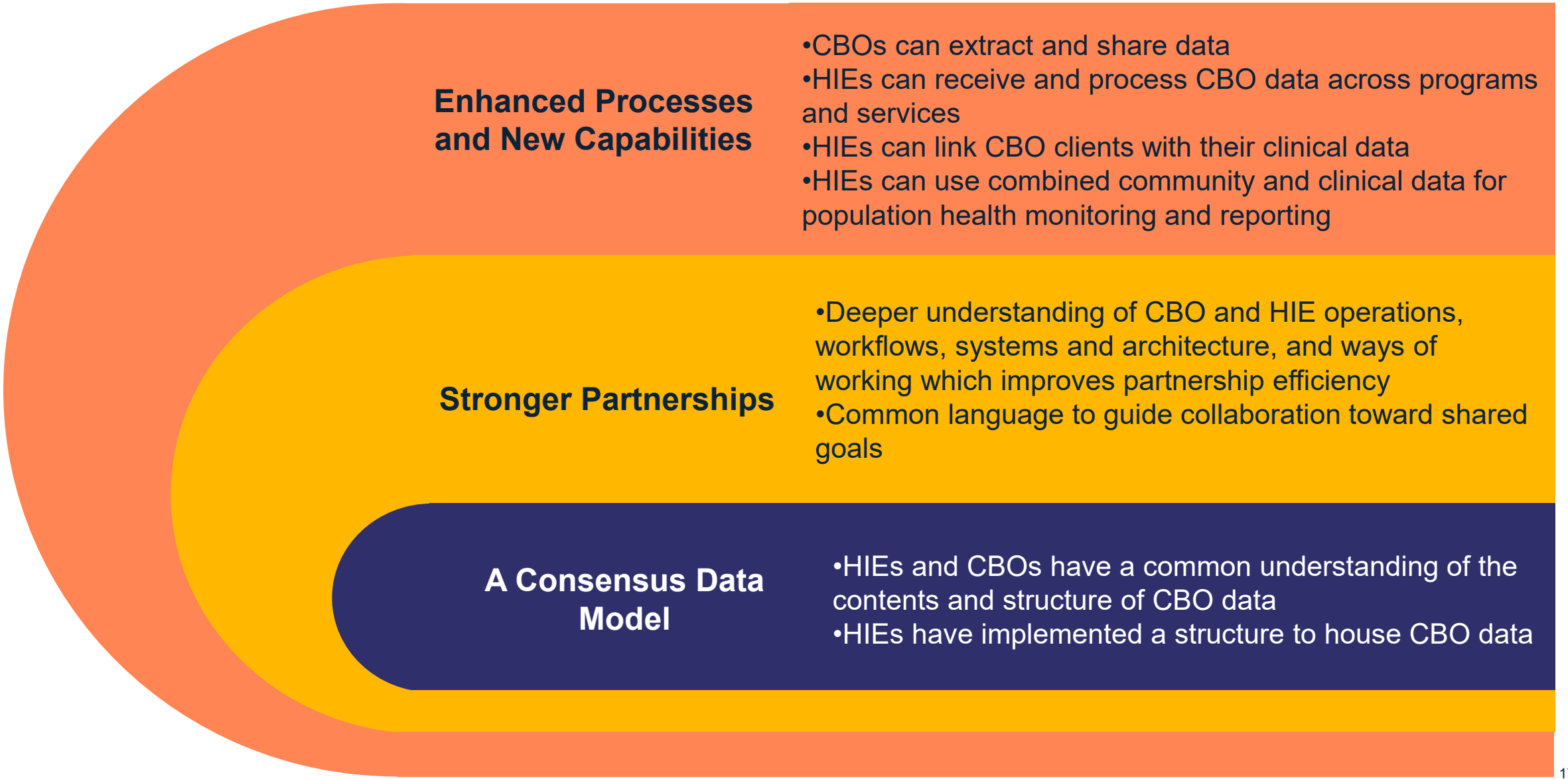
What is an example implementation timing?



*Assumes no new outcome measure development; timelines can be accelerated with dedicated resources

MITRE

What is the impact of a CODI implementation?



COMMUNITY AND CLINICAL DATA INITIATIVE

Mission Statement

CODI empowers organizations to demonstrate the impact of community programs and services by connecting clinical and community data. Our model goes beyond data sharing to provide clinical outcome metrics and visualization resources to drive population health improvements that keep people thriving in their homes and communities.

Data Rights Notice

NOTICE

This presentation was produced for the U. S. Government under Contract Number 75FCMC18D0047, and is subject to Federal Acquisition Regulation Clause 52.227-14, Rights in Data-General.

No other use other than that granted to the U. S. Government, or to those acting on behalf of the U. S. Government under that Clause is authorized without the express written permission of The MITRE Corporation.

For further information, please contact The MITRE Corporation, Contracts Management Office, 7515 Colshire Drive, McLean, VA 22102-7539, (703) 983-6000.