

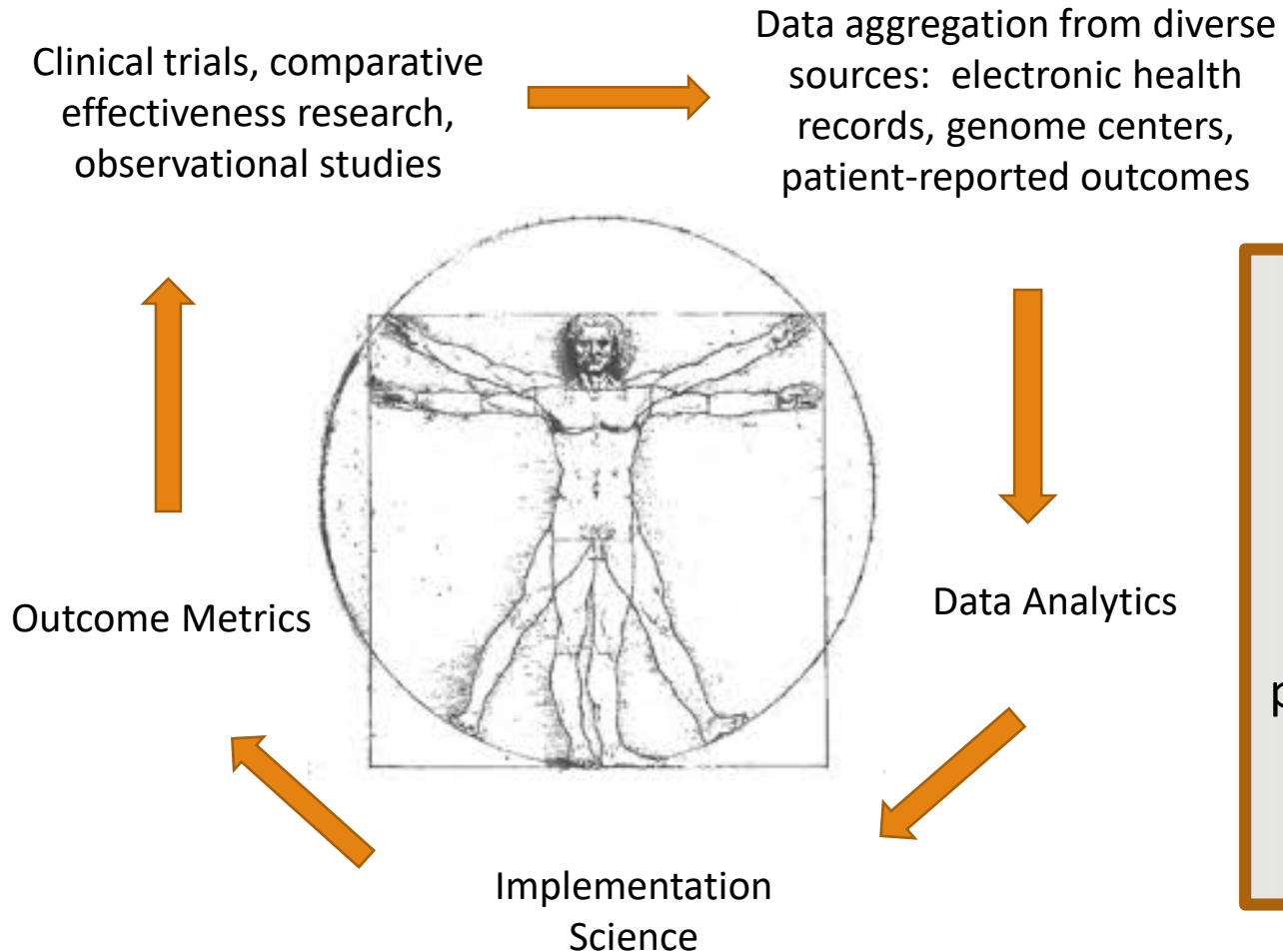
Opportunities and Challenges for Using Digital Health Applications in
Oncology: A Virtual Workshop
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Minimal Common Oncology Data Elements

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**Definition: Learning Health System**

“An integrated health system which harnesses the power of data and analytics to learn from every patient and feed the knowledge of what works best back to clinicians, health professionals, patients and other stakeholders to create cycles of continuous improvement.”

Friedman CP et al, 2010; Sci Trans Med 2:57

A photograph of a rustic stone wall made of irregular grey and brown stones. The wall is the central focus, with some bare, thin branches visible in the upper right and bottom right corners. At the base of the wall, there is some dry grass and patches of snow. Three semi-transparent grey rectangular boxes with thin blue borders are overlaid on the wall, each containing bold black text.

TOOLS AND ANALYTICS

DATA ACCESS

COMPUTABLE DATA STANDARDS



mCODE™



| Value | Distinct Patients |
|-----------------------------|-------------------|
| Non-smoker | 560,281 |
| Never smoked tobacco | 462,842 |
| Ex-smoker | 373,431 |
| Current smoker | 121,186 |
| Unknown tobacco consumption | 83,550 |
| Smokes tobacco daily | 81,250 |
| Occasional tobacco smoker | 22,607 |
| Heavy smoker | 5,898 |
| Light tobacco smoker | 3,478 |
| Tobacco user | 576 |
| Current tobacco non-user | 212 |
| Chews tobacco | 160 |
| Passive smoker | 140 |
| Smokeless tobacco | 96 |
| Pipe smoker | 23 |

*>15.5 million entries

Subset of **51** different representations

EMRs:

Allscripts Epic
Aria Mosaiq
Centricity OncoEMR
CureMD NextGen

GENERALLY AVAILABLE

- Diagnosis codes
- Encounter codes
- Infused medications
- Laboratory tests
- Smoking/Pain assessments
- Physical exam values

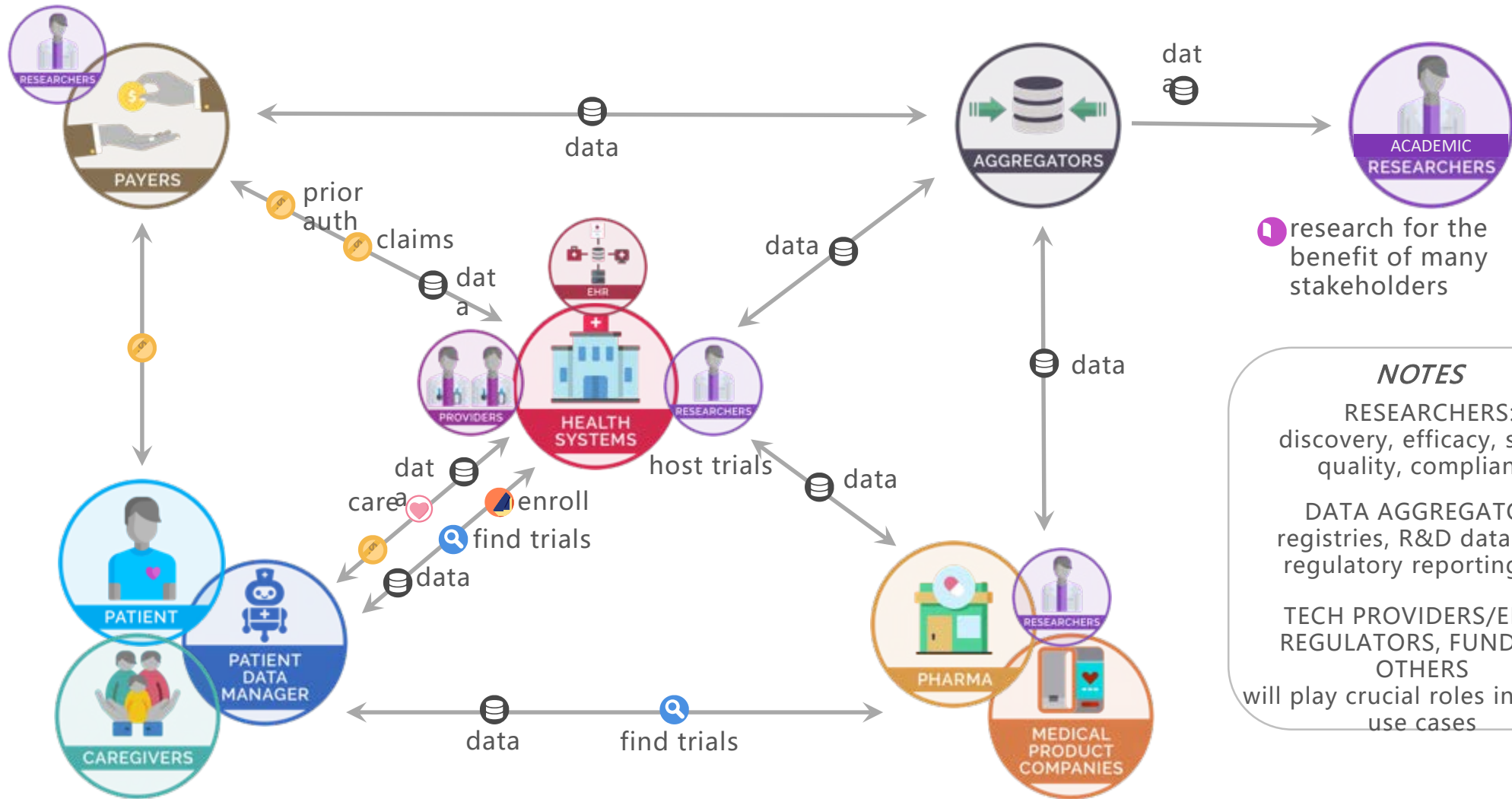
SOMETIMES AVAILABLE

- Staging (group and individual elements)
- Oral medications
- ER/PR/HER2 status
- ECOG performance scores
- Hospice referral

GENERALLY NOT AVAILABLE

- Histology
- Genetic tests
- Treatment intent
- Surgery
- Radiation Therapy
- Imaging results
- **Disease status (progressing, stable, NED)**

Vision: Patient Data Collected Once to Support Many Uses



mCODE™

Purpose: To develop and maintain standard computable data formats, known as Minimal Common Oncology Data Elements (mCODE), to achieve data interoperability and enable progress in clinical care quality initiatives, clinical research, and healthcare policy development

MITRE

ASCO®
AMERICAN SOCIETY OF CLINICAL ONCOLOGY

FDA

ASTRO
TARGETING CANCER CARE

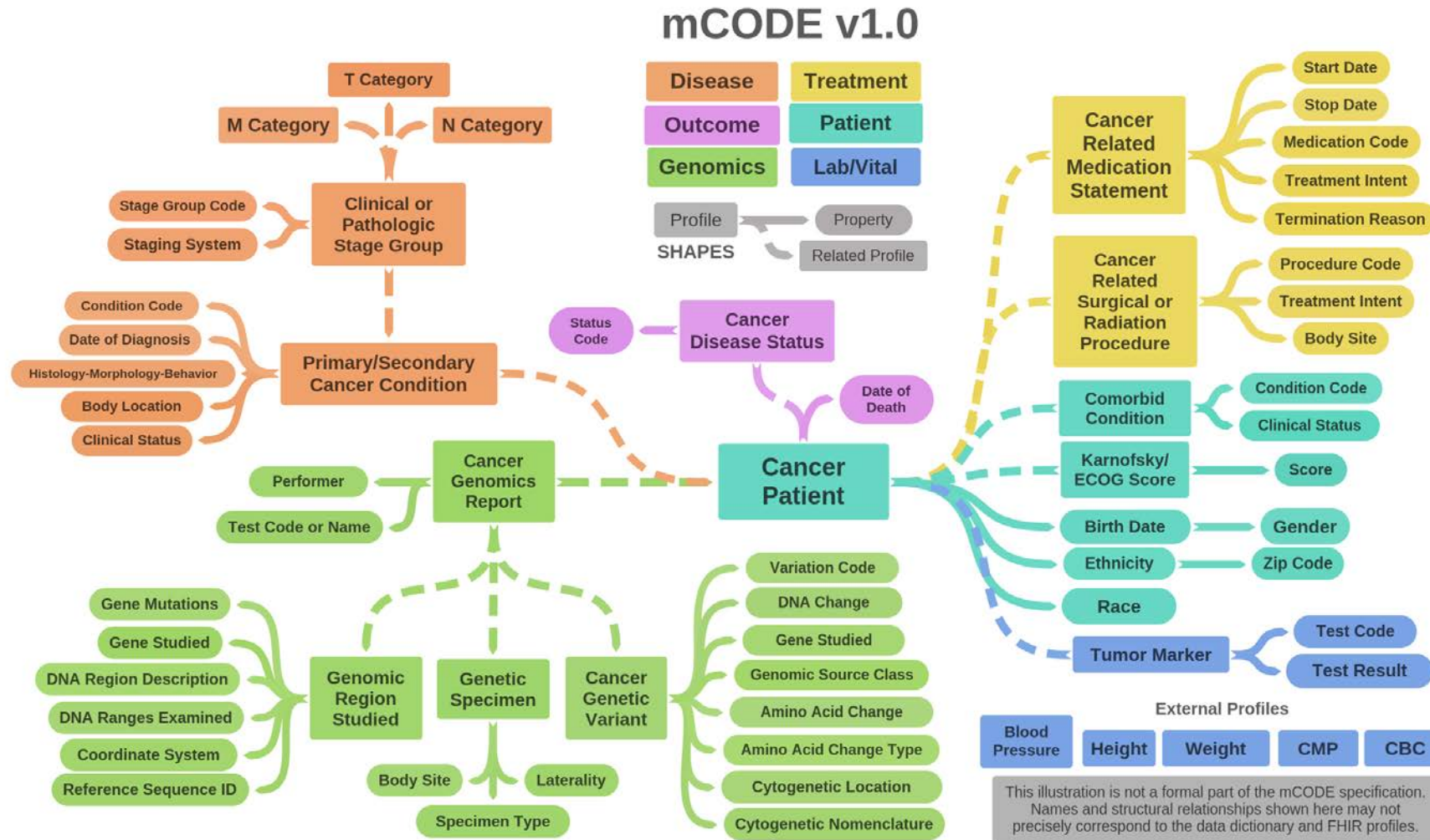
Alliance
for Clinical Trials
in Oncology
FOUNDATION

SSO Society of
Surgical
Oncology®

 **HL7® FHIR®**

...put tools for language growth in the hands of the users

coggle





A New HL7 FHIR Accelerator



<http://hl7.org/Codex>

A community and platform to accelerate interoperable data modeling and implementation around mCODE, leading to step-change improvements in cancer care and research

CodeX Community of Practice

A group of health systems and supporting organizations, working together within the CodeX HL7 FHIR Accelerator.

Goal: Develop and share best practices for implementing mCODE and extensions into production EHRs and other systems.



Latest developments on mCODE, CodeX, and cancer data exchange



Develop and share best practices
for clinical workflows, data
modeling, and exchange



Ask questions and learn from the experience of other community members

Organizations participating in the CoP to date include:

- Alliance for Clinical Trials in Oncology
- American Society of Clinical Oncology
- ASTRO
- Brigham and Women's Hospital
- Cancer Insights
- Center for International Blood & Marrow Transplant Research
- Centers for Disease Control and Prevention
- Cerner
- Dana Farber Cancer Institute
- Duke University Health System
- Elsevier
- Epic
- Foundation Medicine
- Intermountain Medical Center
- JKM Software
- Kaiser Permanente
- MaineHealth
- Mayo Clinic
- Memorial Sloan Kettering Cancer Center
- Trinity Health/Saint Joseph Health System
- Princess Margaret Cancer Center
- Quantum Leap Health Collaborative
- University of California San Francisco Medical Center
- University of Michigan Medicine
- University of Texas Southwestern Medical Center

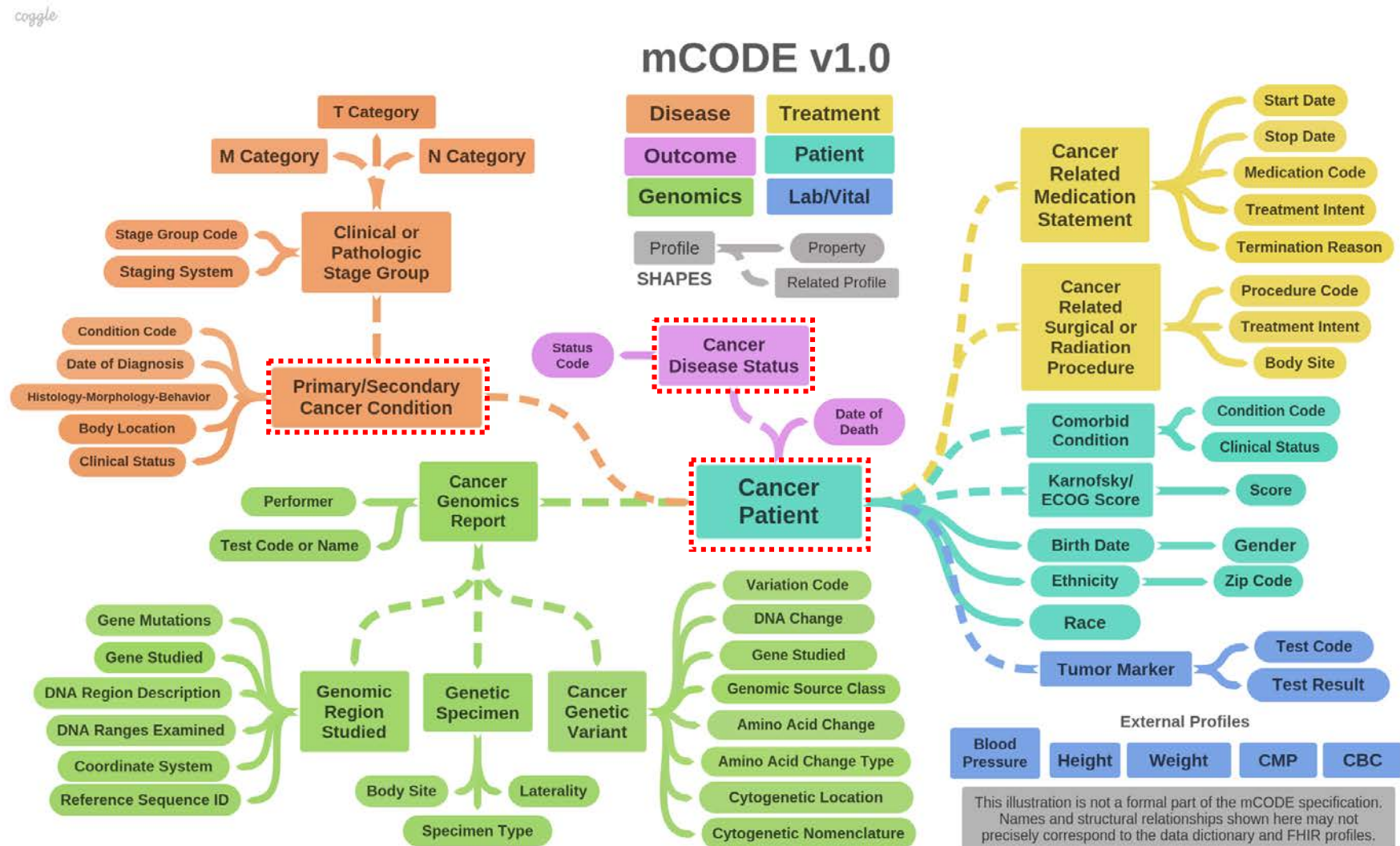


MITRE

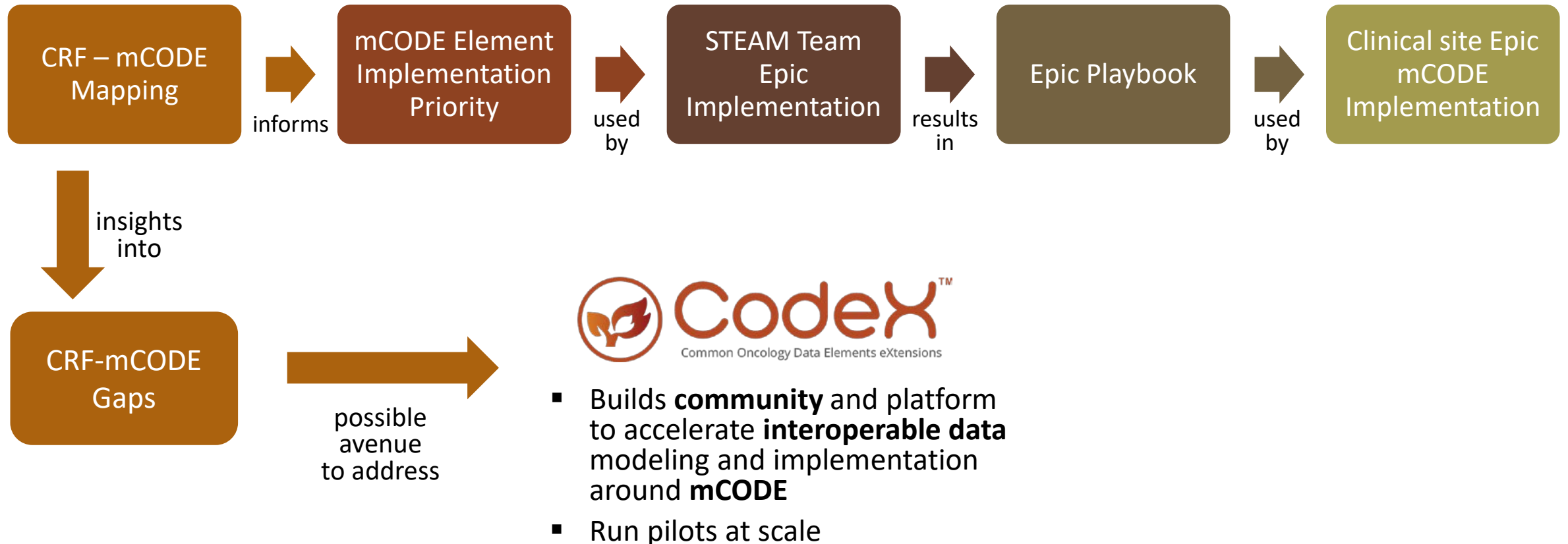


How well does mCODE v1.0 cover the data elements required to complete case report forms for Alliance treatment trials?

CRF – mCODE Mapping














ICAREdata mCODE to CRF Mapping Process Overview



STEAM = Scalable Technology for EHR Adoption of mCODE

Growing Community Working across Use Case Projects

| Use Case | Currently working on project |
|--------------------------------------|--|
| Clinical Trials Matching |     |
| Registries |   |
| Radiation Oncology Care Coordination |   |
| Clinical Care Pathways |  |
| Prior Authorization |   |

mCODE Initial Collaborators



For more information:

- <https://mCODEinitiative.org>
- <https://confluence.hl7.org/display/COD/CodeX+Home>