



# ONC FHIR at Scale Taskforce (FAST)



# Presenters

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# Today's Presentation Objectives & Goals



- Collaborative efforts are coming together to leverage the power of APIs and the HL7 FHIR standard, taking the industry one step closer to improved digital data access and exchange
- Carequality, Argonaut, and Da Vinci individually are working towards proposing approaches to address the future of digital data access and exchange in specific domains towards goals such as reducing provider and administrative burden with health IT and empowering the patient
- Meanwhile, the *FAST* Initiative is working to address the infrastructural challenges holding back the deployment and adoption of these individual solutions at scale

## Goals



- Raise awareness of the *FAST* approach, goals and accomplishments to date
- Understand how FHIR collaborative efforts complement each other and how *FAST*'s work is set apart
- Highlight how working collaboratively provides value to reach a common goal and how you can get involved



## What is *FAST*?

*The FHIR at Scale Taskforce (FAST), convened by the Office of the National Coordinator for Health IT (ONC), brings together a highly representative group of motivated healthcare industry stakeholders and health information technology experts.*

*The group is set to identify HL7<sup>®</sup> Fast Healthcare Interoperability Resources (FHIR<sup>®</sup>) scalability gaps and possible solutions, analysis that will address current barriers and will accelerate FHIR adoption at scale.*





# FAST Importance to/for the ONC

- 1) ONC is focused on connecting healthcare and health data through a national interoperable Health IT infrastructure.
- 2) ONC is working to reduce the regulatory and administrative burden related to the use of health IT, including EHRs.
- 3) ONC is working on ways to give clinicians more time to focus on what matters – caring for their patients.

## Supporting Documents;

- [ONC's Cures Act Final Rule](#)
- [Strategy on Reducing Burden Relating to the Use of Health IT and EHRs](#)
- [2020-2025 Federal Health IT Strategic Plan](#)

(deadline for public comment extended to 4.3.20 at 11:59:59 PM ET!)





# ONC's 21<sup>st</sup> Century Cures Act Final Rule



## Main Landing Page;

<https://www.healthit.gov/curesrule/>

## Putting the patient first in health technology enables the health care system to deliver:

- Transparency into the cost and outcomes of their care
- Competitive options in getting medical care
- Modern smartphone apps to provide them convenient access to their records
- An app economy that provides patients, physicians, hospitals, payers, and employers with innovation and choice

## Direct Links;

- [Fact Sheets](#)
- [Webinars](#)
- [Media/Press](#)
- [Blog Post](#)
- [Download Final Rule](#)

# The *FAST* Journey





# FAST Taskforce Antitrust Notice

- The ONC FHIR At Scale Taskforce (*FAST*) (Hereinafter “Taskforce”) is committed to full compliance with existing federal and state antitrust laws.
- All members involved in the Taskforce effort, including its advisory groups, will comply with all applicable antitrust laws during the course of their activities. During Taskforce meetings and other associated activities, including all informal or social discussions, each member shall refrain from discussing or exchanging competitively sensitive information with any other member. Such information includes, but may not be limited to:
  - Price, premiums, or reimbursement charged or paid for products or services
  - Allocation of customers, enrollees, sales territories, sales of any products or contracts with providers
  - Any other competitively sensitive information that is proprietary to a member company
- If you have any specific questions or concerns, seek guidance from your own legal counsel.
- Members should not bring confidential information or intellectual property (hereinafter “Intellectual Property”) owned by their respective member companies into Taskforce meetings. To the extent such Intellectual Property is shared with the Taskforce that shall not be construed as a waiver of member company’s rights to, or ownership in, the Intellectual Property.





# P2 FHIR to *FAST*

## Oct 2017 – Payer + Provider (P2) FHIR Taskforce Established

Originally focused on Payer/Provider collaboration

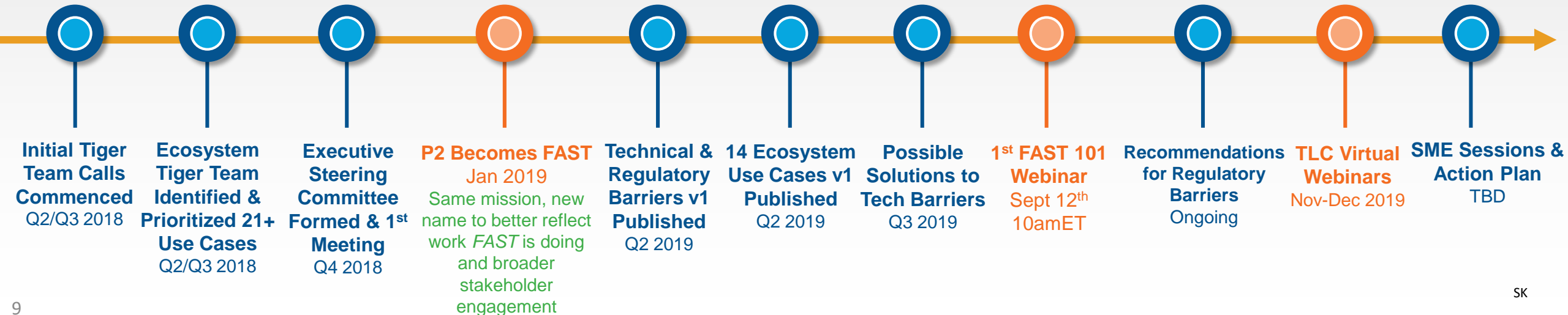
## Q1 2018 – Taskforce Charter Created

**Problem:** Ecosystem and infrastructure barriers prevent wide-scale adoption and deployment of FHIR

**Purpose:** Address ecosystem barriers and accelerate adoption of FHIR for production exchange of clinical information between payers and providers

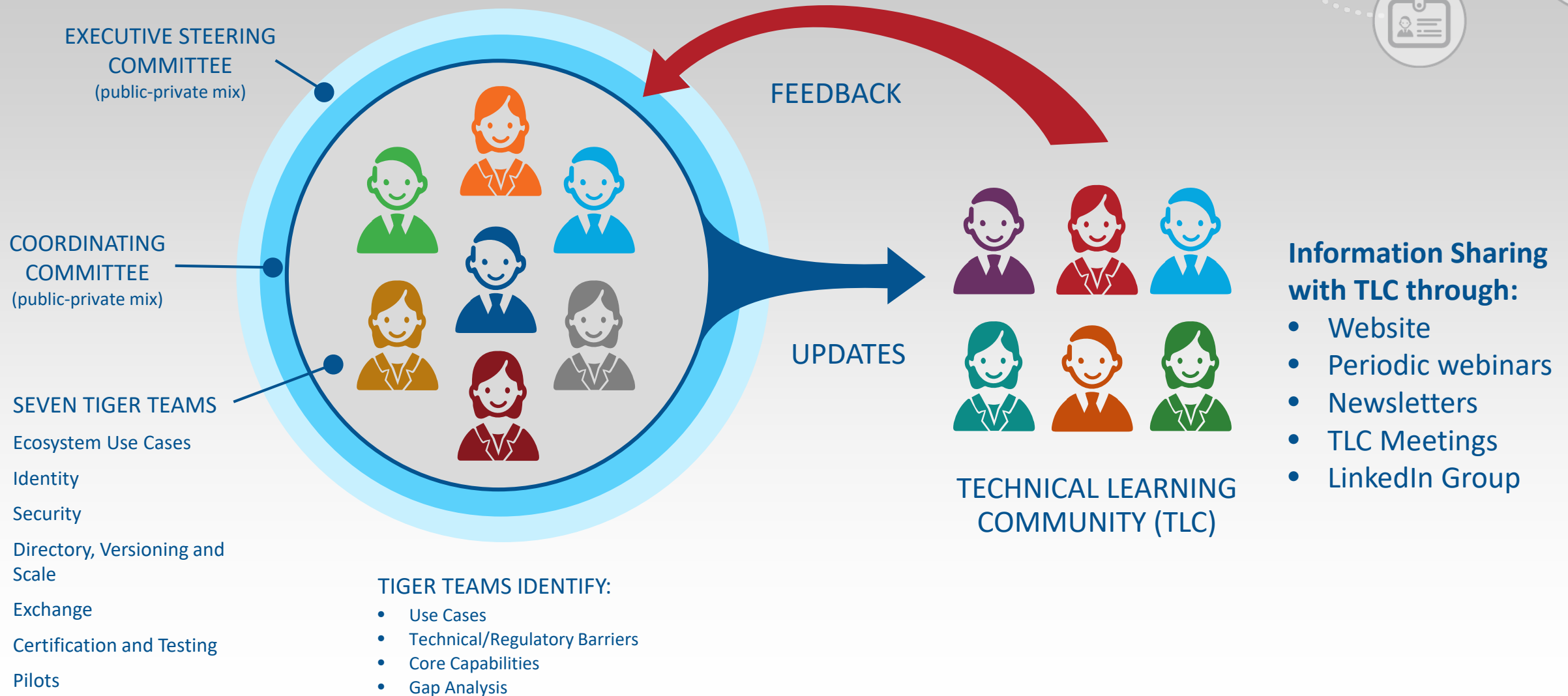
**Need:** Establish a national architecture for standardized exchange of information using FHIR

**Scope:** Establish ONC taskforce that leverages “tiger teams” to focus on near term, practical approaches for the standardized exchange of information using FHIR



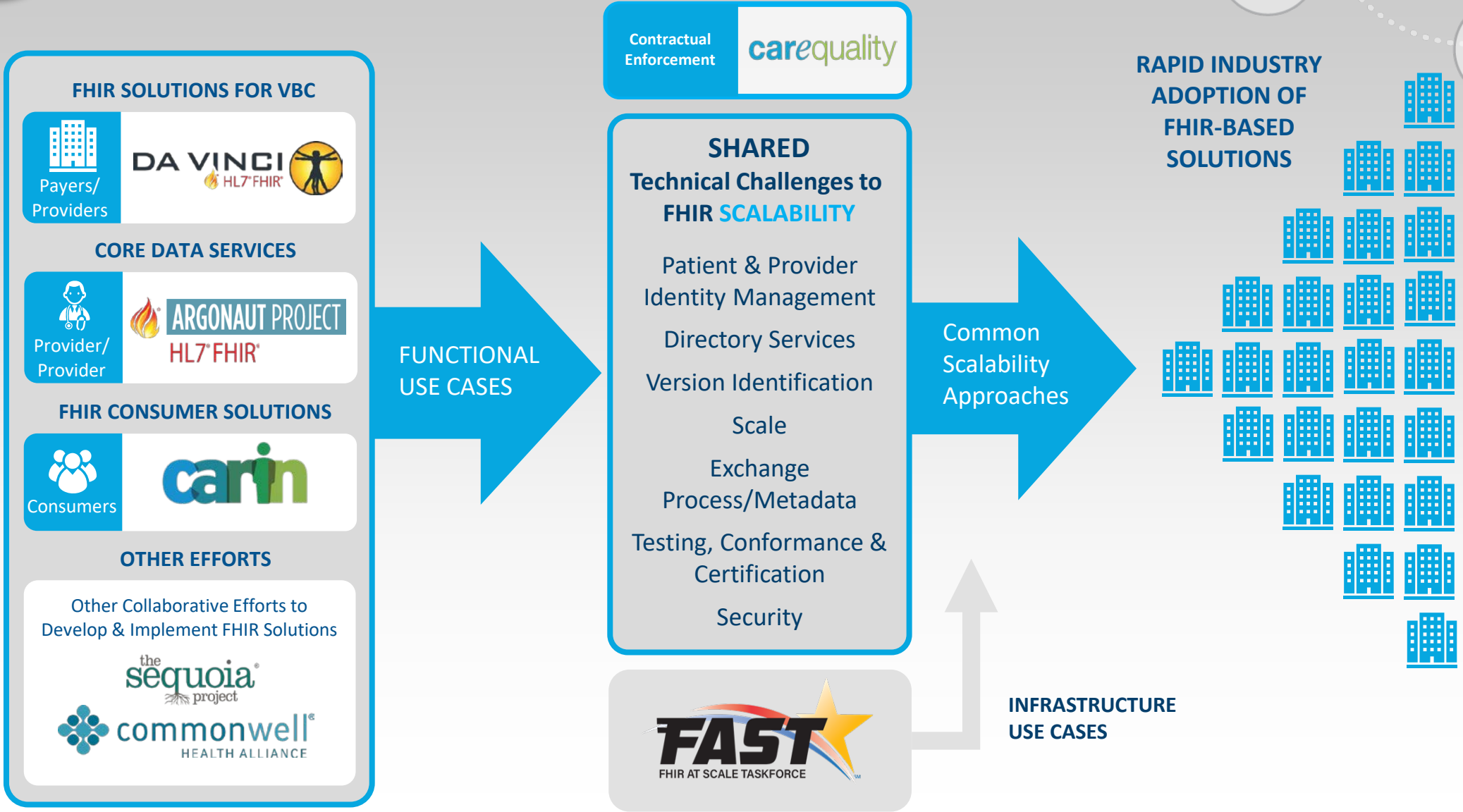


# FAST Organization & Community Engagement

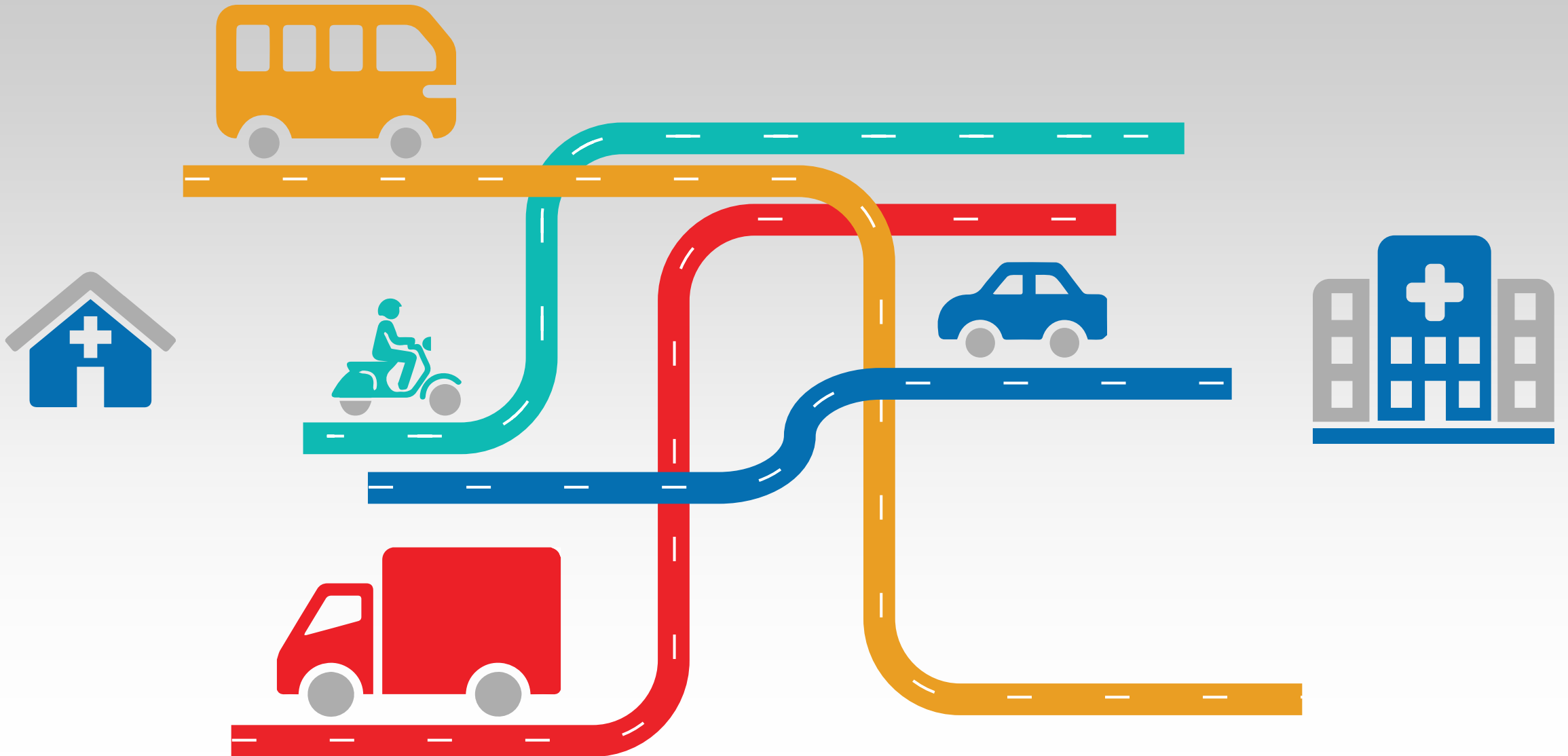




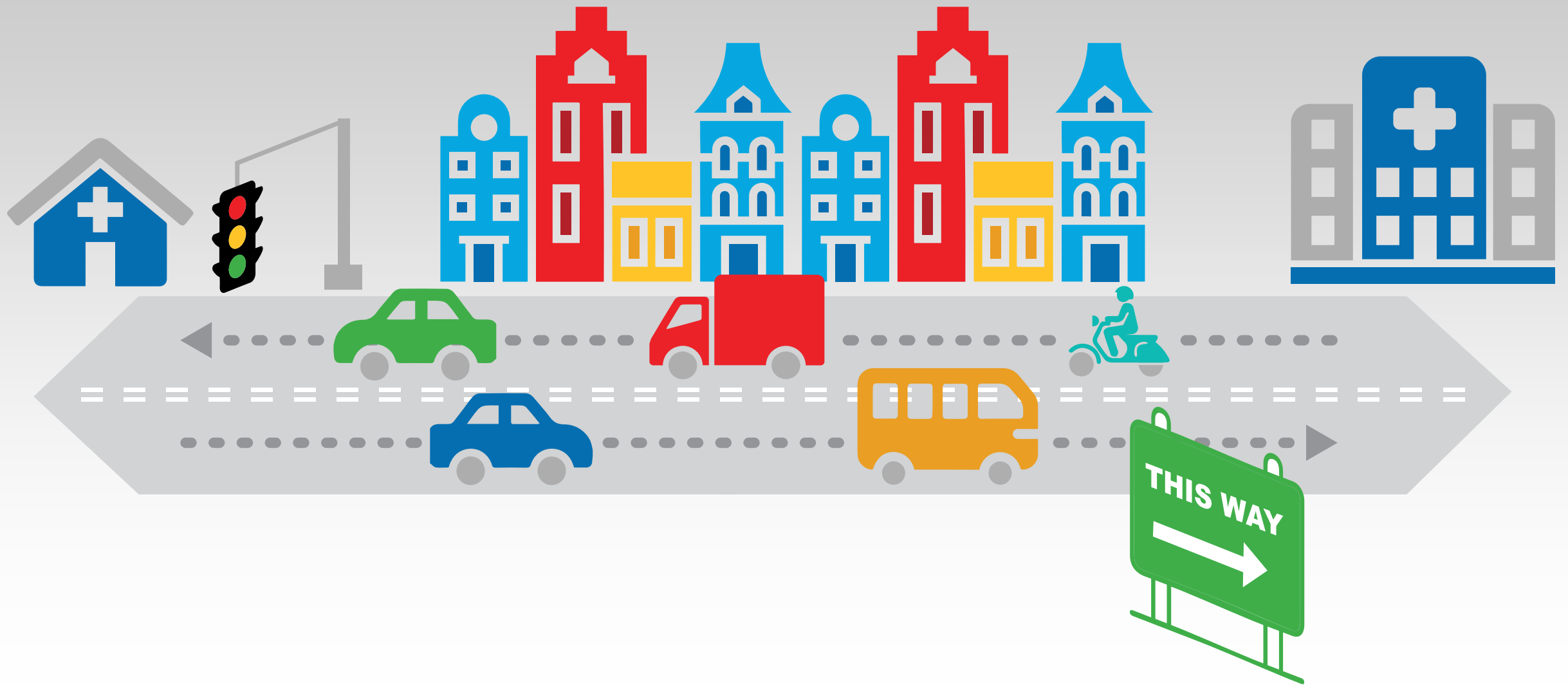
# Collaborative Efforts Towards FHIR Adoption



# Lack of Consistent Infrastructure Impacts Flow



# Well-Planned Infrastructure Creates Efficiency

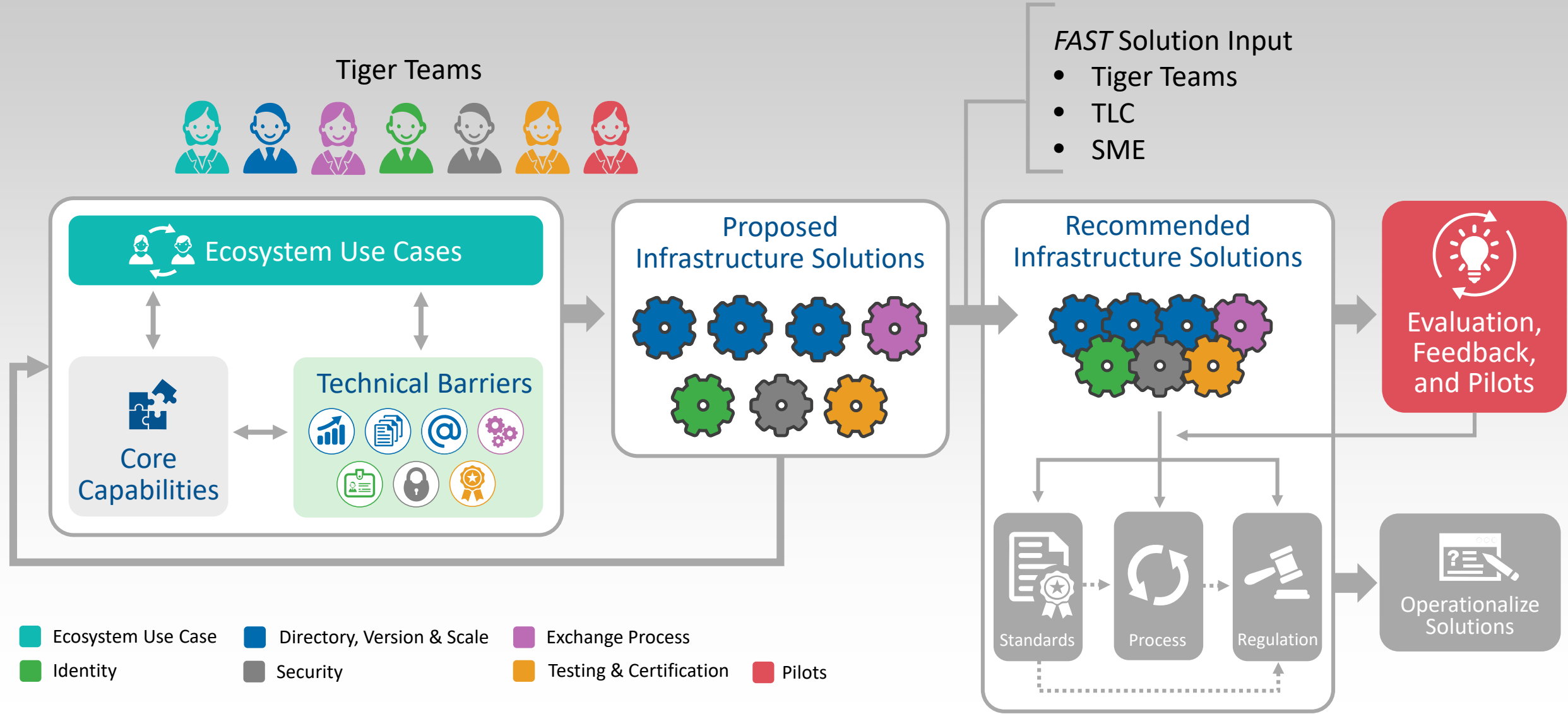






# FAST Solutions Process

Tiger Teams





# FHIR Adoption - Technical Challenges & FAST Proposed Solutions

## DIRECTORY, VERSIONS AND SCALE

### DIRECTORY

#### CHALLENGE:

There are multiple places to find endpoints. Is there a place I can go to find all of them?



#### PROPOSED SOLUTION:

A national solution for FHIR Endpoint Discovery

### VERSIONS

#### CHALLENGE:

A way to communicate and manage multiple versions



#### PROPOSED SOLUTION:

Supporting multiple production versions of FHIR

### SCALE

#### CHALLENGE:

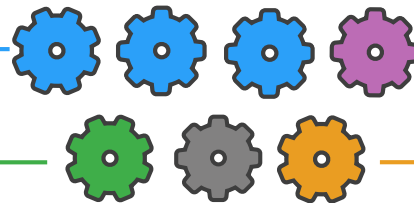
How can a high volume of FHIR transactions be consistently and predictably exchanged in a hybrid exchange model?



#### PROPOSED SOLUTION:

Requirements for FHIR RESTful exchange intermediaries

## Proposed Infrastructure Solutions



## EXCHANGE PROCESS

#### CHALLENGE:

How do we enable consistent and reliable transaction exchange?



#### PROPOSED SOLUTIONS:

- Reliable Routing with Metadata Across Intermediaries
- Reliable Routing Across Intermediaries Using Destination Specific Endpoints

## TESTING & CERTIFICATION

#### CHALLENGE:

A way to measure conformance to the standard



#### PROPOSED SOLUTION:

ONC FHIR Testing and Certification Program

## IDENTITY

#### CHALLENGE:

How can a requestor and receiver uniquely identify the patient/member?



#### PROPOSED SOLUTIONS:

- Mediated Patient Matching
- Collaborative Patient Matching
- Distributed Identity Management

## SECURITY

#### CHALLENGE:

How do we manage permissions & security across millions of patients/payers/providers?



#### PROPOSED SOLUTIONS:

- Trusted Dynamic Client Registration
- Tiered OAuth
- UDAP Authentication & Authorization



# Published Content and FAST Artifacts



## Technical Barriers to HL7® FHIR® Solutions Scalability

The FHIR at Scale Taskforce (FAST) has identified a series of technical barriers that need to be addressed in order to scale Fast Healthcare Interoperability Resources (FHIR) as a ubiquitous technology that enables scale clinical information exchange between providers, payers, and other stakeholders. These barriers include a lack of a FHIR endpoint locator, lack of common authentication and authorization approaches to ensure appropriate patient privacy, gaps in the ability to bridge patient identity across stakeholders, and a lack of industry wide governance and versioning for FHIR Application Programming Interfaces (APIs).

The FAST initiative brings together a highly representative, collaborative group of motivated healthcare stakeholders and health information technology experts who are working to analyze and synthesize the solutions across the industry, and to further identify infrastructural and scalability gaps and barriers, with the objective to propose a suite of solutions that will accelerate FHIR adoption at scale.

The following technical barriers identified by the FAST team were found to impede the adoption of FHIR at scale and will be the basis for FAST-proposed scalability solutions:



1. Directory Services
2. Identity
3. Security
4. Testing, Conformance, & Certification
5. Versioning
6. Scaling

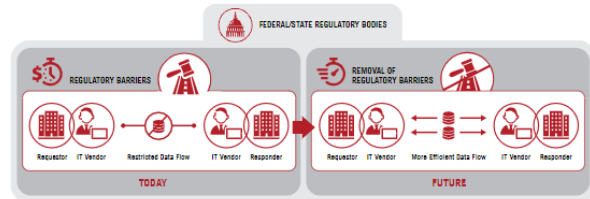


## Regulatory/Policy Barriers to HL7® FHIR® Solutions Scalability

The FHIR at Scale Taskforce (FAST) has identified regulatory and policy barriers that need to be addressed in order to scale Fast Healthcare Interoperability Resources (FHIR) as a ubiquitous capability that enables wide-scale clinical information exchange between providers, payers, and other stakeholders.

These barriers include the HIPAA minimum necessary regulations, the naming of a standard in a way that limits innovation, the lack of a single patient identifier, and the cost of accessing data via FHIR Application Programming Interfaces (APIs).

The industry is interested in scaling FHIR use. The most recent Centers for Medicare & Medicaid Services (CMS) Notice of Proposed Rulemaking (NPRM) and the Office of the National Coordinator for Health IT (ONC) NPRM (published in the federal register on March 4, 2019) call for widespread use of APIs to enable consumers to access their health data and foster industry-wide adoption. However, the following regulatory and policy barriers impede scalable FHIR adoption, and they are the focus for which FAST will identify potential solutions:



1. HIPAA Minimum Necessary
2. Regulatory Mandate for a Single Named Standard
3. Patient Identifier
4. Data Blocking
5. Use of NPPES as the Repository for Endpoints
6. HIPAA Transactions Requiring X12



## Endpoint Discovery

### Introduction & Background

The purpose of the FHIR at Scale Taskforce (FAST) is to augment and support recent HL7® Fast Healthcare Interoperability Resources (FHIR®) efforts focused on ecosystem issues that, if mitigated, can accelerate adoption.

### Reference Documentation

FAST Technical Barriers



### Accelerate Use of FHIR



Identify

Barriers to adoption and opportunities for synergy:

- Endpoint Services
- Security Approaches
- Identity Resolution
- Versioning & Scale Approaches
- Testing Approaches
- Regulatory/Policy Needs



Why

Removing barriers and aligning consensus-based adoption via the network effect will accelerate adoption of FHIR for the production exchange of clinical information between providers and payers



How

**Analyze** — look, learn, understand FHIR pilots/prototypes/deployments underway  
**Synthesize** — Subject Matter Expert (SME) evaluation, identify trouble spots, develop best practices and proposed solutions  
**Catalyze** — through additional standards work, barrier identification, testing, pilots, and leveraging existing resources

FAST use case model is unique in that it describes ecosystem needs as opposed to specific functional use cases. Use cases for FAST are derived in one of 3 approaches as described in the graphic below:

### Use Case Approaches

Can Be Used Exclusively or in Combination to Define the Dimensions of the Model



**Barrier Use Case**  
Align use cases directly to an identified barrier such as resource locator, security, and identity.



**Healthcare Ecosystem Use Case**  
Instead of aligning directly to a barrier, utilize industry ecosystem use cases which identify and spotlight barriers.



**Functional Use Case**  
Use functional use cases, such as Da Vinci, as a foundation for FAST. FAST provides the "highways" while the industry efforts, like Da Vinci, provide the cars, trucks and buses. Uses the "vehicles" to help define the dimensions of the "highway".

ST-UC\_Endpoint\_Discovery-Core\_Capability-CC1

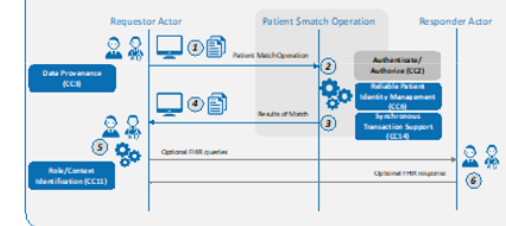
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## Proposed Solutions: Identity

### Supporting Diagrams & Flows

#### Solution #1: Real Time Patient Matching



ID	Description	Notes
1	<p>Patient \$match Request: Requestor Actor calls a Patient \$match operation provided by the Responder Actor or a trusted intermediary of the Responder Actor.</p> <p>The \$match request will use Patient resource in the request. The attribute "onlyCertainMatches" will be set to true for Use Cases involving Patient Care Delivery.</p> <p>As an optional pre-cursor to the \$match, the Requestor may verify the Patient's demographics to the best of their ability, ranging from a manual verification of identification such as Driver's Licenses to automated checks against non-healthcare databases such as credit bureau records, if warranted.</p>	<p>To do: Define minimum and optional set of attributes to improve match scores.</p> <p>List use cases where onlyCertainMatches must be set to true.</p> <p>Identify recommended limits for "count" for example use cases.</p>

FAST-PS-Identity

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All content is available on the <https://tinyurl.com/ONC-FAST>



## FHIR at Scale Taskforce: 2019 End-of-Year Report

What is FAST? | Why FAST and Why Now? | How Does FAST Do It? | FAST Coordination & Collaboration | 2019 Accomplishments | Communicate, Inform & Collect | Work Continues in 2020 | Volunteer-Driven Progress | Acknowledgements

### How Does FAST Do It?

The FAST collaborative adopted a taskforce model to better harness the knowledge and expertise of various Subject Matter Experts (SMEs) across the industry continuum. Seven Tiger Teams, staffed entirely by volunteer SMEs, have performed gap analysis on industry models and functional use cases and identified technical and regulatory/policy barriers and core capabilities that are essential to FHIR-based solutions scalability. The Tiger Teams' goal is the development of proposed approaches to remove the taskforce-identified infrastructural scalability challenges, through additional standards work, processes, or proposed regulatory measures.

The taskforce architectural needs are driven and supported by two FAST Chief Architects, who ensure the taskforce is focused on the industry's most relevant infrastructural challenges and solutions.

The Tiger Teams' work product is presented for feedback to the FAST Coordinating Committee members and ultimately to the Executive Steering Committee, comprised of a public-private mix of significant, top industry leaders who have acknowledged the importance of the FAST work and provide continued support and member resources to the taskforce.

The work coming out of the Tiger Teams is approved by the Coordinating and Executive committees and then presented to the TLC, soliciting industry feedback through webinars and documentation of the gathered feedback. To further validate or reshape the nature of proposed solutions.

### FAST Organization & Community Engagement

**TIGER TEAMS IDENTIFY:**

- Ecosystem Use Cases
- Technical Barriers
- Regulatory and Policy Barriers
- Core Capabilities
- Gap Analysis

**EXECUTIVE STEERING COMMITTEE** (public-private mix)

**COORDINATING COMMITTEE** (public-private mix)

**SEVEN TIGER TEAMS**

- Ecosystem Use Case
- Identify
- Security
- Directing, Versions, and Scale
- Exchange Process
- Testing & Certification
- Plays

**UPDATES**

**TECHNICAL LEARNING COMMUNITY (TLC)**

**INFORMATION SHARING WITH TLC THROUGH:**

- Website
- Periodic webinars
- Newsletters
- TLC Meetings
- LinkedIn Group



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### What is FAST?

The FHIR at Scale Taskforce (FAST) initiative, launched in 2017 and led by the Office of the National Coordinator for Health IT (ONC), brings together a highly representative group of motivated healthcare industry stakeholders and health information technology experts. The group, comprised of industry-wide expert volunteers, is set to identify Fast Healthcare Interoperability Resources (FHIR)'s scalability challenges and potential approaches, to address current technical, regulatory or policy barriers, as well as identify relevant industry gaps. The group focuses on the infrastructure needed to support efficient health information flow, between multiple exchanging partners and to accelerate the FHIR standard adoption at scale.

### PROGRESS AT A GLANCE

- 35 technical and regulatory barriers defined across 6 Tiger Team focus areas
- 15 ecosystem use cases developed
- 15 core capabilities identified
- 11 proposed solutions developed
- 1900+ attendees at 6 interactive Technical Learning Community Webinars and industry meetings

### FAST Evolution

Development of knowledge management process to share, update, and publish best practices



**2017**

- OCT 2017: P2 FHIR Taskforce Established
- NOV 2017: Taskforce Charter Created by the Coordinating Committee

**2018**

- Q2/Q3 2018: Initial Tiger Team Calls Commenced
- Q4 2018: Executive Steering Committee Formed & 1st Meeting


**2019**

- JAN 2019: P2 Becomes FAST
- SEP 2019: Technical Learning Community Established

### Why FAST and Why Now?

FHIR adoption expanded rapidly over the last few years. The FHIR-related functional use cases explored by the industry uncovered important scalability challenges, calling for infrastructural approaches to support these use cases to scale. The Centers for Medicare and Medicaid Services (CMS) and ONC proposed rules (CMS-9115-P, RIN 0955-BA01) that call for the use of Application Program Interfaces (APIs) to facilitate access to patient health data, provider directories and care coordination — FHIR V4 release as well as the FHIR Accelerator Program are drivers to increased FHIR-based solutions adoption. Specifically, the accelerator initiatives came together and built on functional use cases aiming to facilitate data integration to improve patient outcomes, provider workflow, and the transition to value-based care. While FHIR accelerator initiatives are generally focused on addressing particular functional aspects, the FAST initiative is focused on addressing the infrastructure needed to scale FHIR-based solutions, essential to support broader adoption of the FHIR standard.

Launched under the Payer + Provider (P2) FHIR Taskforce name in October, 2017, the initiative continued to broaden its stakeholder participation and industry engagement, as well as its focus to address core infrastructure and scalability issues that affect various aspects in the industry at large. Acknowledging the industry-wide interest and participation, as well as the applicability of the FAST approaches to many areas outcomes in general, the Taskforce was rebranded as FAST in January of 2019. Since then, FAST Tiger Teams have developed over 15 ecosystem use cases, identified infrastructural core capabilities needed to scale FHIR, and proposed solutions in the respective areas of focus for each of the Tiger Teams, in addition to engaging with the Technical Learning Community (TLC) and other FHIR initiatives to continue to inform on the taskforce goals and approaches.



## FHIR at Scale Taskforce: 2019 End-of-Year Report

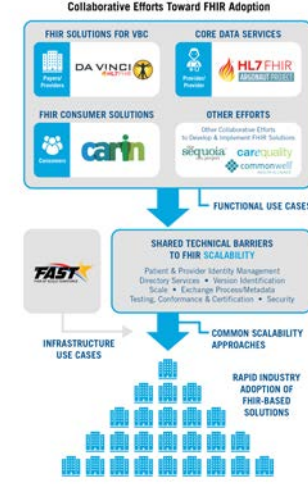
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### Coordination and Collaboration

#### FHIR Initiatives & Industry Engagement

Provides that coordination efforts and efforts to key challenges a wide gap across of scaling a FAST initiative agency and big industry inform Tiger Teams. Provides a simplified of several FHIR ing on addressing them, aimed to among various use functional common technical implementation. Working these with the structural how these solutions to be at scale. We most story-experienced ID scalability complements (done by other teams).

#### Collaborative Efforts Toward FHIR Adoption



**FHIR SOLUTIONS FOR VBC**

- DA VINCI
- HL7 FHIR

**CORE DATA SERVICES**

- HL7 FHIR

**FHIR CONSUMER SOLUTIONS**

- carin

**OTHER EFFORTS**

- Other Collaborative Efforts to Develop & Implement FHIR Solutions
- sequalia
- carequality
- commonwell

**FUNCTIONAL USE CASES**

**SHARED TECHNICAL BARRIERS TO FHIR SCALABILITY**

- Patient & Provider Identity Management
- Directory Services
- Version Identification
- Scale
- Exchange Process/Workflow
- Testing, Conformance & Certification
- Security

**COMMON SCALABILITY APPROACHES**

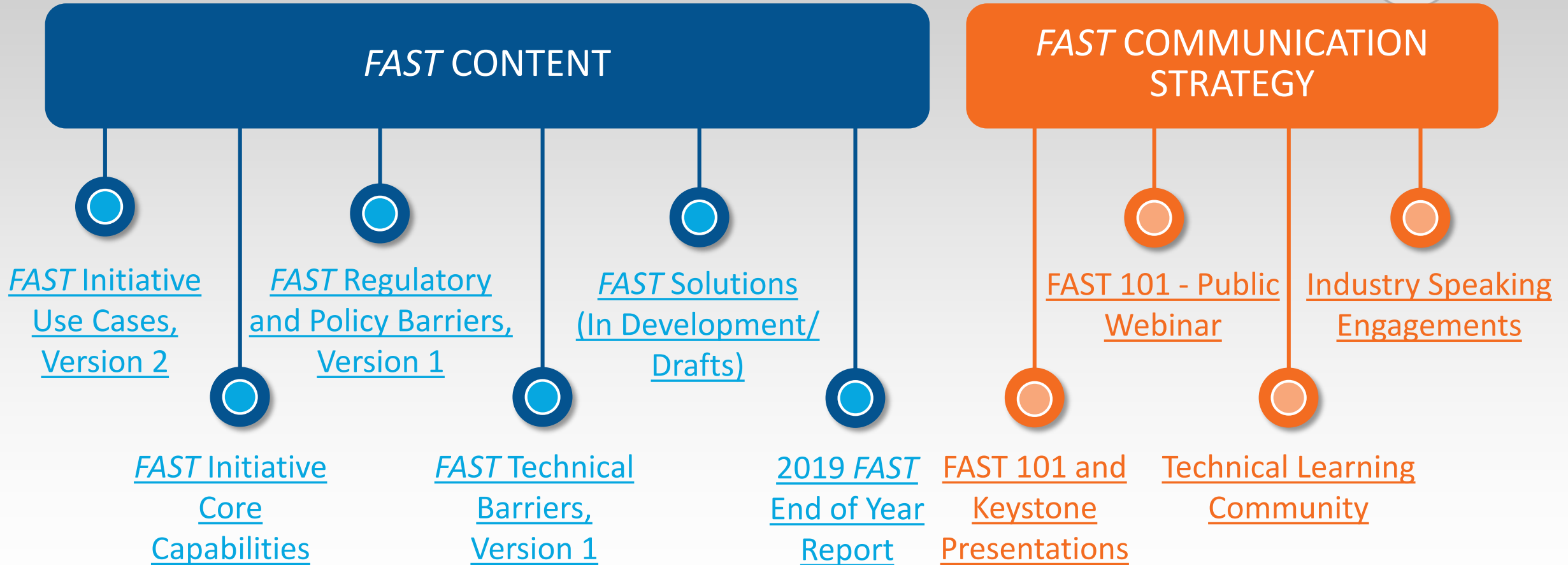
**RAPID INDUSTRY ADOPTION OF FHIR-BASED SOLUTIONS**

2019 End of Year Report

Summarizes progress made in 2019 and provides a sneak-peak of work in 2020



# FAST Initiative Output & Communication Strategy Update



All content is available on the <https://tinyurl.com/ONC-FAST>



## FAST Focus

Patient & Provider Identity Management

Directory Services

Version Identification

Scale

Exchange Process/Metadata

Testing, Conformance & Certification

Security

Pilots

### WANT TO GET INVOLVED??

*Join the Technical Learning Community to get updates and provide input on the technical and regulatory barriers, use cases, and proposed solutions as they are developed.*

**SIGN UP!!**

**&**

**JOIN THE LINKEDIN GROUP**

*Almost 400 members & growing!*

Questions?





# Thank You – Today's Presenters



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For more information on the *FAST* Initiative,  
visit the *FAST* [Project Page](#)

or

<https://tinyurl.com/ONC-FAST>

Have any further questions/suggestions?

Please contact Stephen Konya at [Stephen.Konya@hhs.gov](mailto:Stephen.Konya@hhs.gov)  
& Diana Ciricean at [Diana.Ciricean@hhs.gov](mailto:Diana.Ciricean@hhs.gov)