



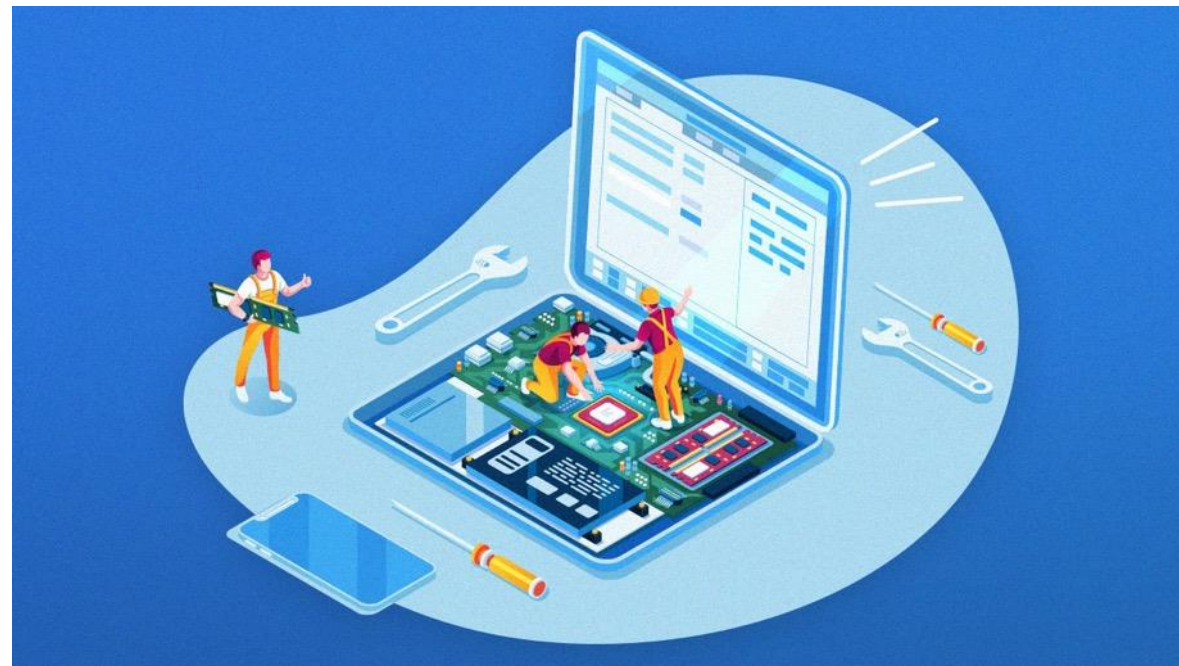
CurrentCare Upgrade and Opportunities for Data Integration: *FHIRing things up!*

Neil Sarkar, PhD, MLIS, FACMI



HealthShare Upgrade

- “HealthShare” is the underlying technology for RIQI’s HIE services, including CurrentCare
- After nearly two years of planning, upgrade formally started in fall 2021
- Base system upgraded in September – Six full versions! (2015 >> 2021)
- Total full downtime < 72 hours
- On track to complete remaining non-standard feature implementations by Q1 2022

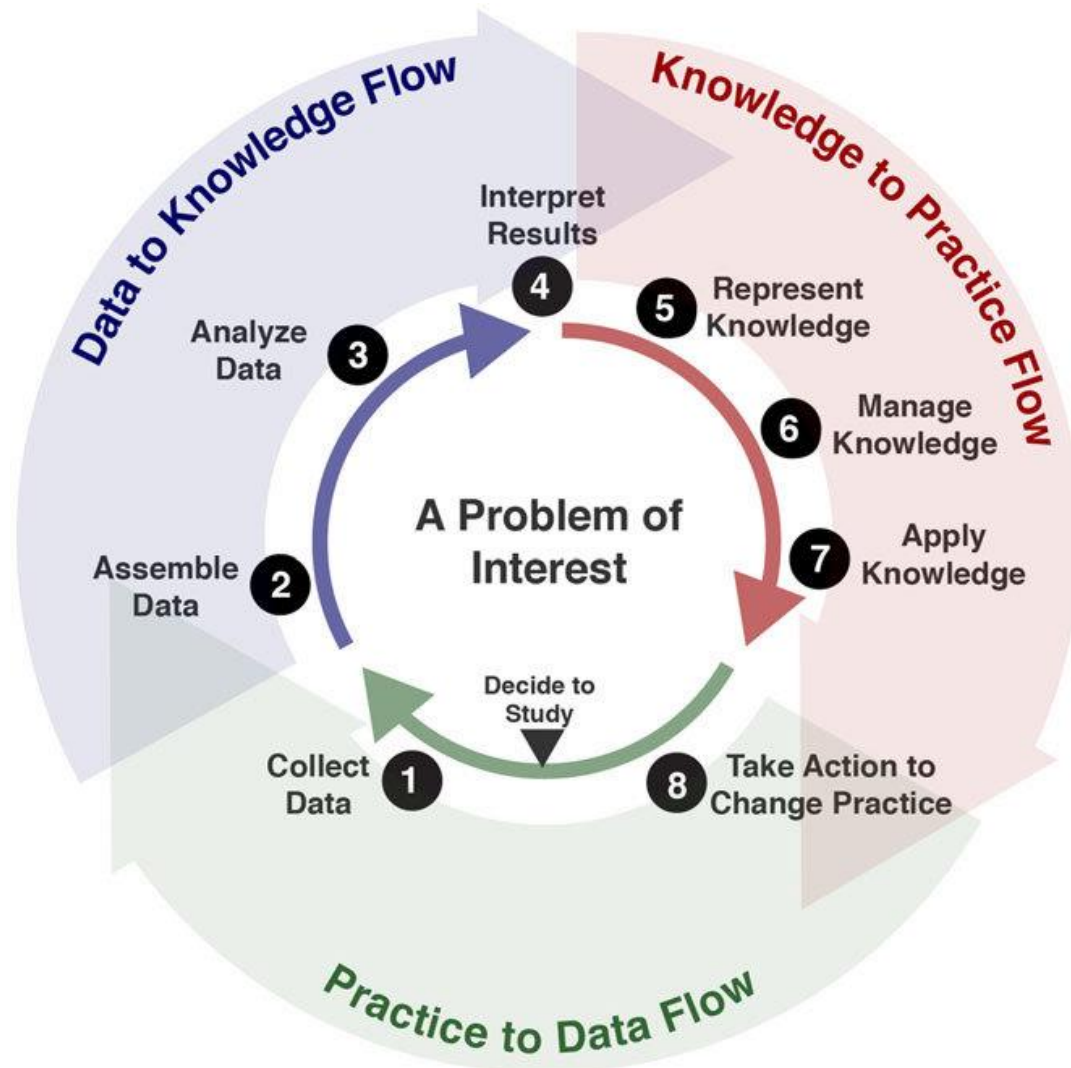


Why Upgrade?

- Performance enhancements, including newer data architecture
- Refreshed application aesthetics and functionality (search!)
- Reduction in maintenance costs and need for customizations
- Updated security and reduced technical vulnerabilities
- Enable contemporary technologies for supporting healthcare data interoperability -- FHIR!



Health Care as a Learning System



Flynn AJ, Friedman CP, Boisvert P, Landis-Lewis Z, Lagoze C. The Knowledge Object Reference Ontology (KORO): A formalism to support management and sharing of computable biomedical knowledge for learning health systems. *Learning Health Systems*. 2018 Apr;2(2):e10054.



21ST CENTURY CURES ACT

GOALS OF THE LEGISLATION

RESEARCH



Remove barriers to research collaboration



Invest in STEM education



Provide new incentives for the development of rare disease drugs

GETTING TREATMENTS TO PATIENTS MORE QUICKLY



Foster coordination to find cures more quickly



Modernize clinical trials to increase access to drugs and treatments



Incorporate patient feedback in drug development and review process

KEEPING JOBS HERE AT HOME



Ensure U.S. remains a global leader in medical innovation, protecting and creating jobs at home



Encourage development of new medical apps to save lives and create jobs

#CURESatOne

E&C



World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of the project, [Mailing lists](#) , [Policy](#) , November's [W3 news](#) , [Frequently Asked Questions](#) .

[What's out there?](#)

Pointers to the world's online information, [subjects](#) , [W3 servers](#), etc.

[Help](#)

on the browser you are using

[Software Products](#)

A list of W3 project components and their current state. (e.g. [Line Mode](#) ,[X11 Viola](#) , [NeXTStep](#) , [Servers](#) , [Tools](#) ,[Mail robot](#) ,[Library](#))

[Technical](#)

Details of protocols, formats, program internals etc

[Bibliography](#)

Paper documentation on W3 and references.

[People](#)

A list of some people involved in the project.

[History](#)

A summary of the history of the project.

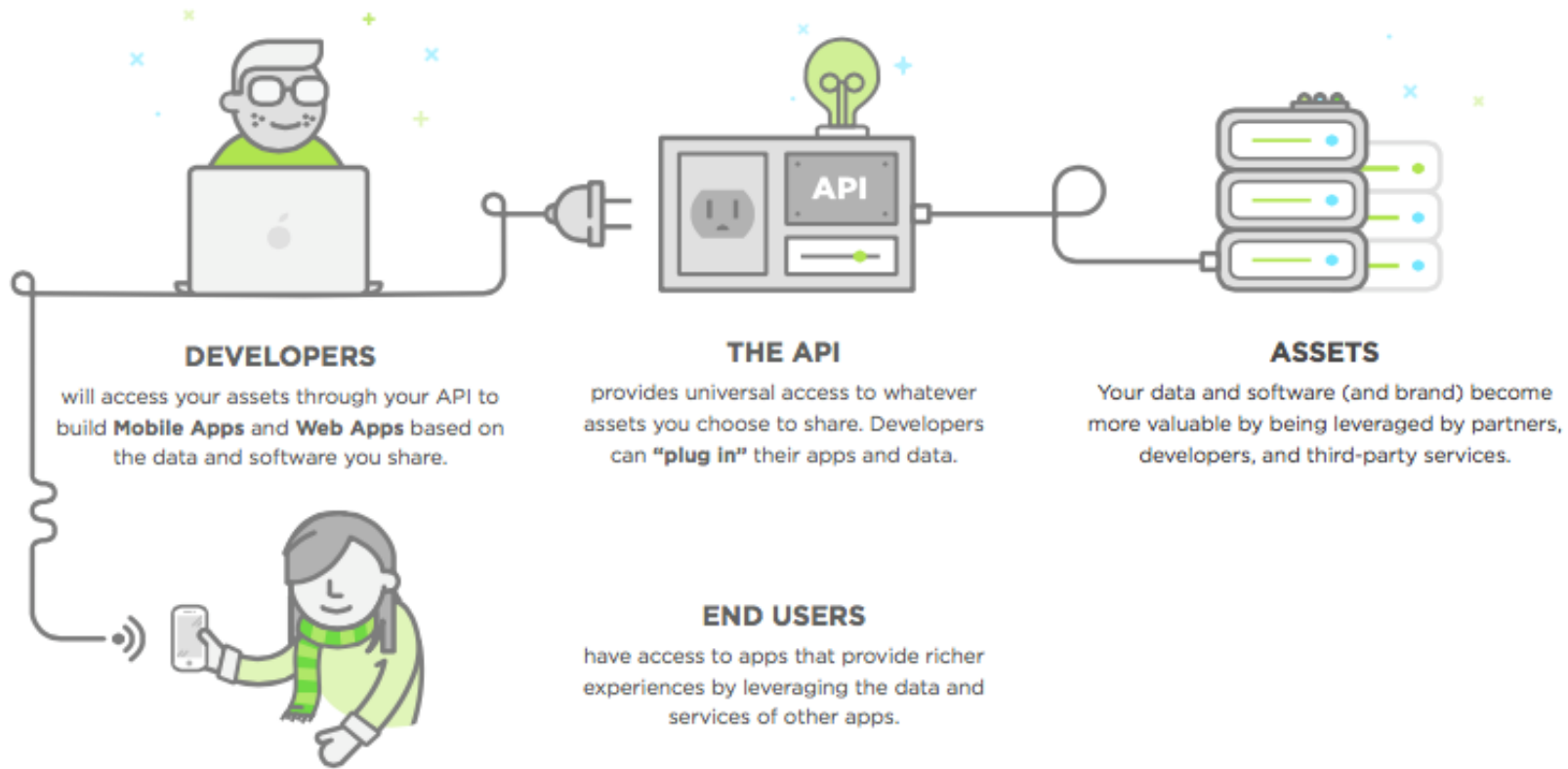
[How can I help ?](#)

If you would like to support the web..

[Getting code](#)

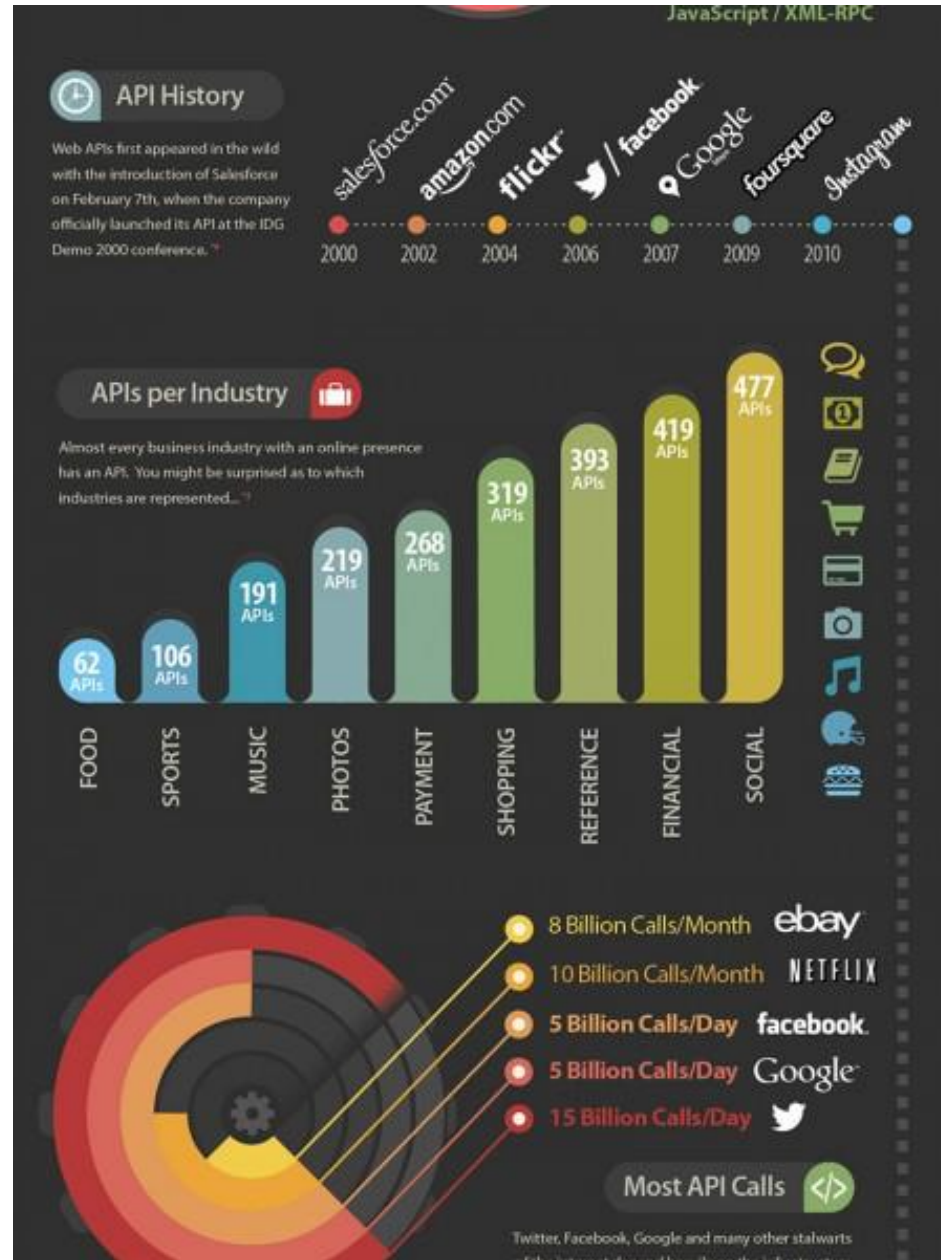
Getting the code by [anonymous FTP](#) , etc.





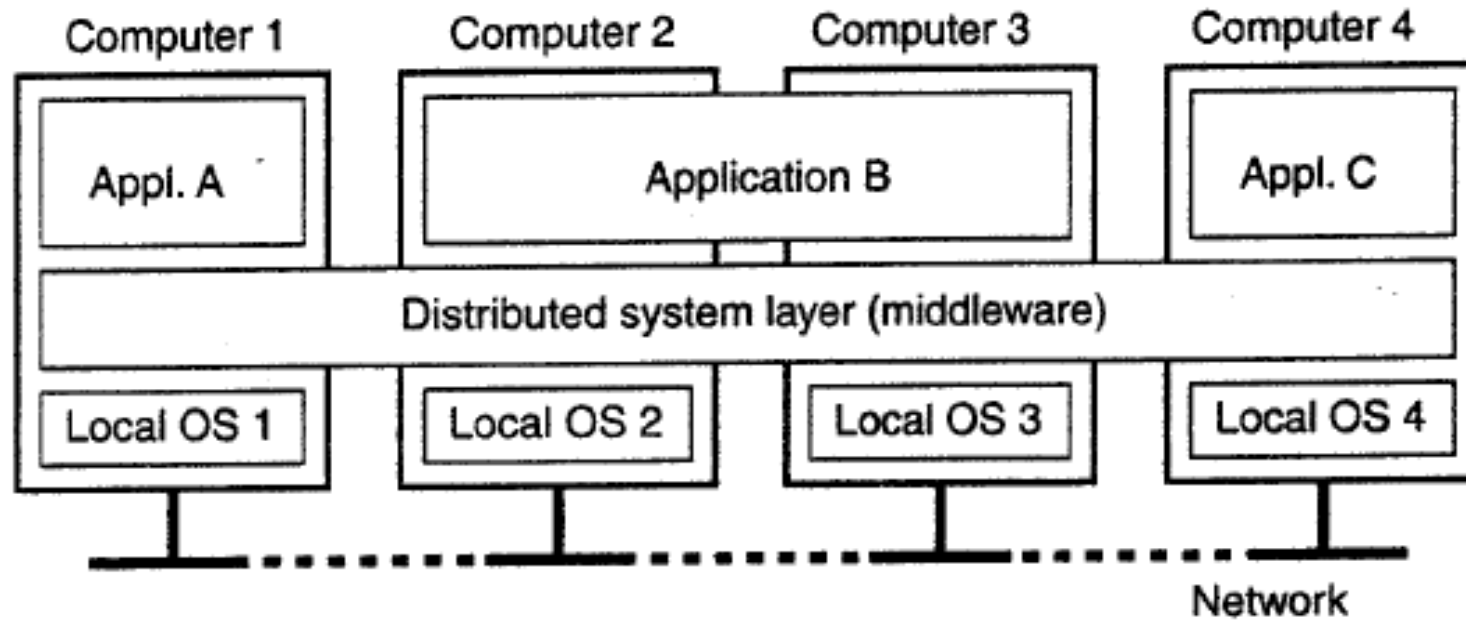
<https://www.upwork.com/hiring/development/intro-to-apis-what-is-an-api/>

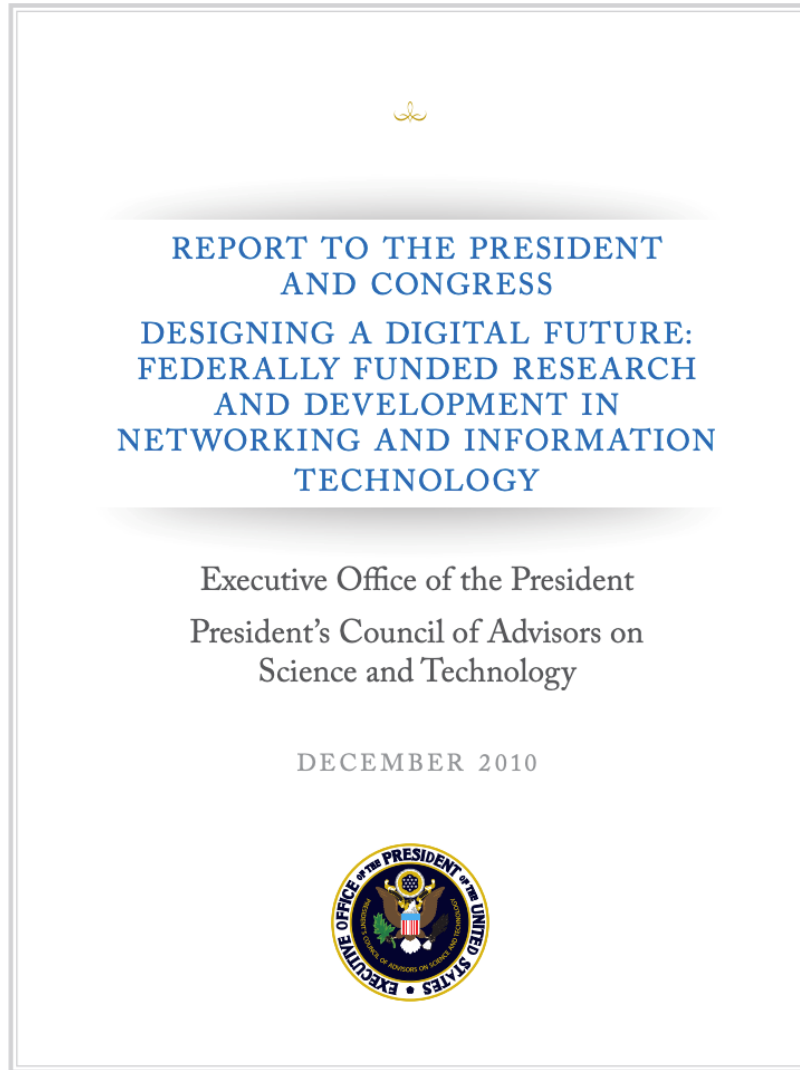




<https://visual.ly/community/infographic/computers/api>







Interoperable Interfaces and Demonstration Testbeds Drive Innovation and Economic Growth

The impact of NIT on key national priorities, including healthcare, energy, and transportation, will be magnified and accelerated through the use of *well-defined* and *interoperable interfaces*, and *demonstration testbeds*. These are mechanisms that breed unfettered innovation.

An *interface* enables one NIT component to connect to and work with others, whether through a network, by exchanging data, or by executing programs. Examples of widely used interfaces include the Internet communication protocols, the HTML document format, and the Microsoft Windows and Apple iPhone software platforms. These interfaces have all been essential to the development of multi-billion dollar NIT industries: the Internet, the World Wide Web, the personal computer, and smart phones.

Interoperable interfaces allow equipment or software from different vendors to work together or communicate. They allow new, innovative creations to work with older, established services. For example, innovation in Web browsers has been possible in part because new browsers use the established HTML document format and HTTP network protocol, and thus are able to access all existing Web content. Innovation has also proceeded on the other side of the interfaces – in Web servers – and in similar fashion a new server implementation works with old browsers because of the standardized interfaces.



The future of efficient health services requires an interface definition for electronic health data and for mechanisms to allow providers and patients to share data. The system must work as well for individual self-employed physicians as it does for regional healthcare organizations. An interoperable specification will spur diversity and innovation in the creation of software that lets doctors and patients make best use of healthcare data.



A Robust Health Data Infrastructure

Contact: Dan McMorrow — dmcorrow@mitre.org

November 2013

JSR-13-700
















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JASON recommends that healthcare interoperability be reoriented away from "siloes legacy systems" toward a centrally orchestrated interoperability architecture based on open APIs and advanced intermediary applications and services. In particular, the report recommends an urgent focus on creating a "unifying software architecture" to "migrate" data from these legacy systems to a new centrally orchestrated architecture to better serve clinical care, research, and patient uses. This architecture would be based on the use of "public" APIs for access to clinical documents and discrete data from EHRs, coupled with enablement of increased consumer control of how data is used.



USCDI v1		
Assessment and Plan of Treatment 	Laboratory  <ul style="list-style-type: none"> • Tests • Values/Results 	Provenance *NEW  <ul style="list-style-type: none"> • Author • Author Time Stamp • Author Organization
Care Team Members 	Medications  <ul style="list-style-type: none"> • Medications • Medication Allergies 	Smoking Status 
Clinical Notes *NEW  <ul style="list-style-type: none"> • Consultation Note • Discharge Summary Note • History & Physical • Imaging Narrative • Laboratory Report Narrative • Pathology Report Narrative • Procedure Note • Progress Note 	Patient Demographics  <ul style="list-style-type: none"> • First Name • Last Name • Previous Name • Middle Name (including middle initial) • Suffix • Birth Sex • Date of Birth • Race • Ethnicity • Preferred Language • Address *NEW • Phone Number *NEW 	Unique Device Identifier(s) for a Patient's Implantable Device(s) 
Goals  <ul style="list-style-type: none"> • Patient Goals 	Problems 	Vital Signs  <ul style="list-style-type: none"> • Diastolic Blood Pressure • Systolic Blood Pressure • Body Height • Body Weight • Heart Rate • Respiratory rate • Body Temperature • Pulse oximetry • Inhaled oxygen concentration
Health Concerns 	Procedures 	<ul style="list-style-type: none"> • Pediatric Vital Signs *NEW <ul style="list-style-type: none"> - BMI percentile per age and sex for youth 2-20 - Weight for age per length and sex - Occipital-frontal circumference for children >3 years old
Immunizations 		





HL7[®] FHIR[®]

ARGONAUT PROJECT

Technology Vendors

Accenture

Apple

athenahealth

Cerner

Epic

Change Healthcare

MEDITECH

Surescripts

The Advisory Board Company/Optum

Provider Organizations

Beth Israel Deaconess Medical Center

Intermountain Health

Mayo Clinic

Partners Healthcare

SMART at Boston Children's Hospital

Staff (current and past)

Prime contractor: HL7

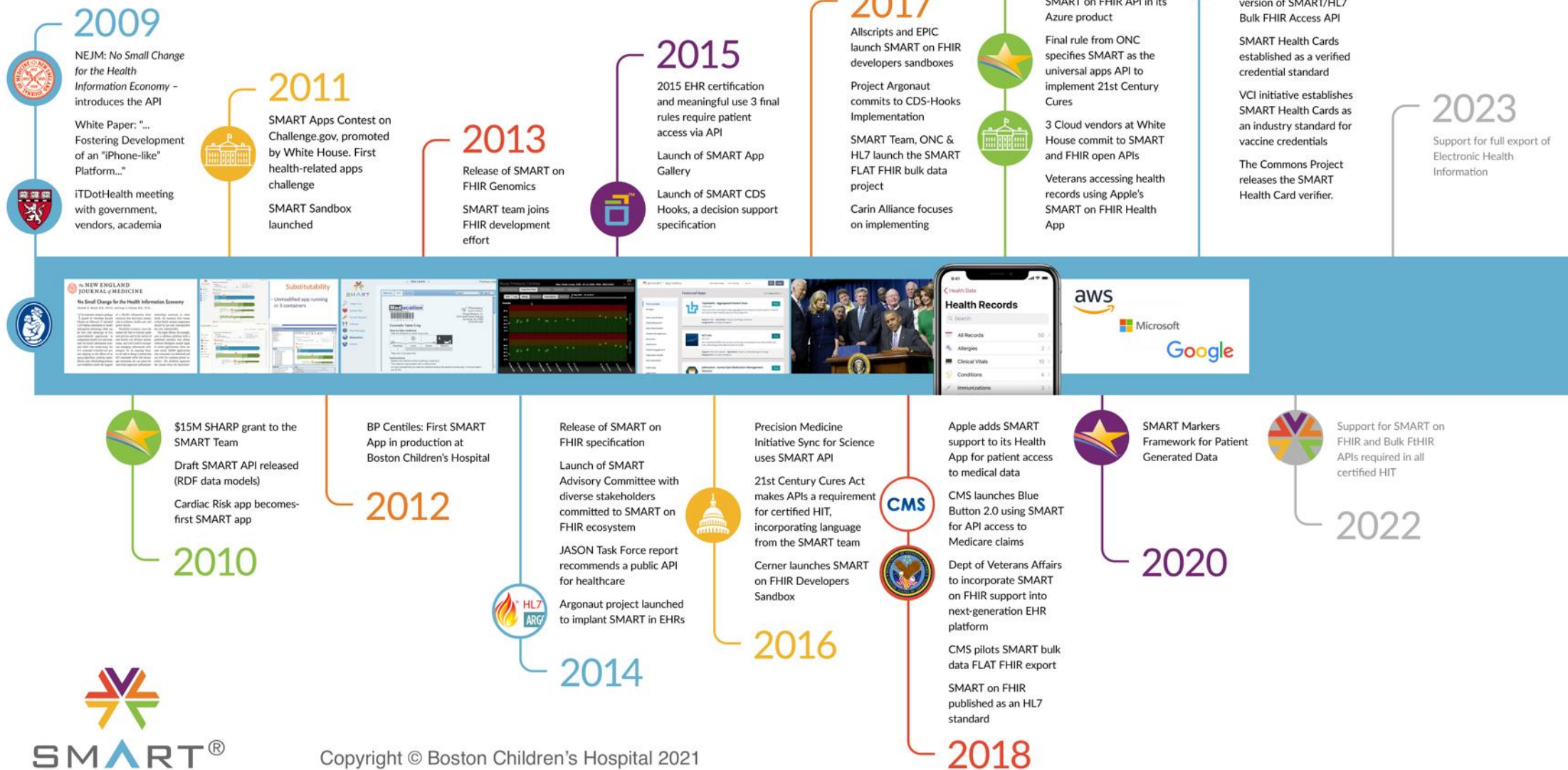
FHIR initiatives: Grahame Grieve, Josh Mandel, Brett Marquard, Eric Haas

OAuth initiatives: Dixie Baker, Josh Mandel

Project Management: Micky Tripathi, Jennifer Monahan



A SMART Evolution



THANK YOU

[HTTPS://WWW.RIQI.ORG](https://www.riqi.org)

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