The Office of the National Coordinator for
Health Information Technology

Data Access Framework (DAF)

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Putting the **I** in Health**IT**

www.HealthIT.gov

DAF Background 1

- DAF was initiated by ONC to remove barriers to data access and thus enable effective innovation, care delivery, research and ultimately a LHS

- DAF primarily focuses on enabling _providers_ to access their patient's clinical information

  - Within their own Local Organization (Local DAF)

  - From a single Targeted external Organization (Targeted DAF)

  - From multiple external Organizations (Federated DAF – future phases)

DAF Background 2

Data Access Framework

Local Access via Intra-Organization Query	Targeted Access via Inter-Organization Query	Federated (Distributed) Access across multiple organizations
• Create and disseminate queries internal to organization • Query Structure Layer • API's for Data Access • Authentication/Authorization Layer • Receive standardized responses • Query Results Layer	• Create and disseminate queries to single external Organization • Query Structure Layer • Transport Layer • Authentication/Authorization Layer • Receive standardized responses from external orgs • Query Results Layer	• Create and disseminate queries to multiple orgs • governed by a network • Receive aggregated or de-identified responses • Focus on Information Model for the network and • Leverage standards from earlier phases.
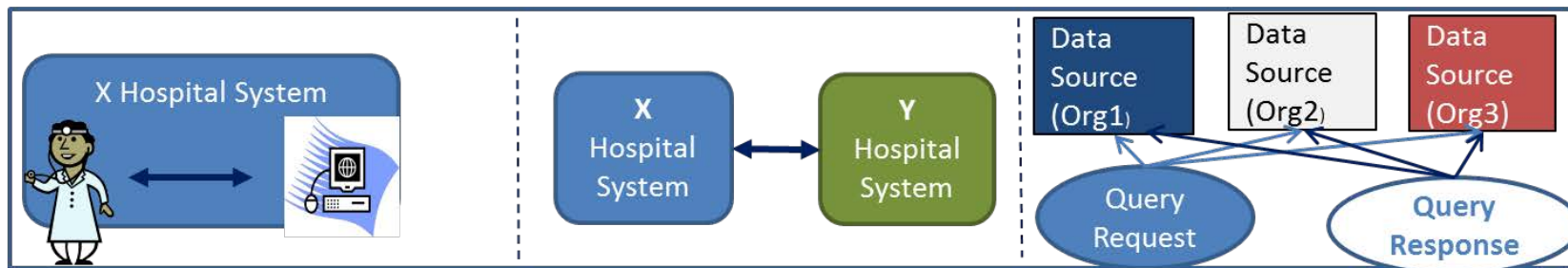
Standards based approach to enable information access at all levels: Local, Targeted, and Federated (Distributed)
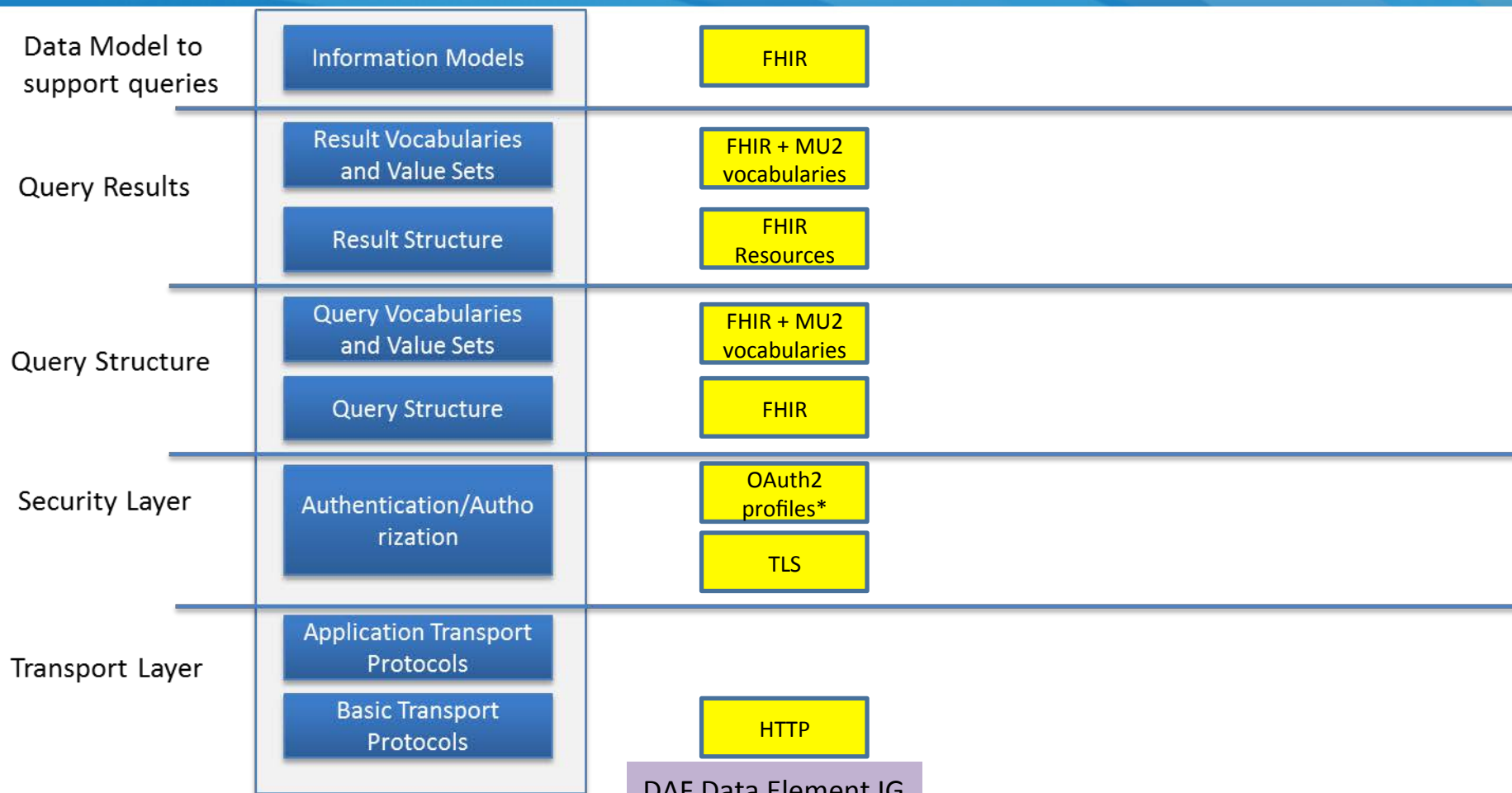
Sample User Stories

- Ability to access patient's data using document metadata paradigm for treatment
  - Get latest Lab Report for a Patient so that I can check her HBA1C levels
  - Get CCD's for the last 3 years for a patient

- Ability to access patient's data based on discrete data elements captured within a patient record for follow-up visits and appointment scheduling
  - Get me all patients < 5 years who are due for an immunization
  - Get me all patients > 75 years with HBA1C > 7%

- Enable Researchers access to patient's medication and activity data for diabetes research

DAF – Building Blocks and Solutions

Data Model to support queries	Information Models
Query Results	Result Vocabularies and Value Sets
	Result Structure
Query Structure	Query Vocabularies and Value Sets
	Query Structure
Security Layer	Authentication/Authorization
Transport Layer	Application Transport Protocols
	Basic Transport Protocols

DAF – Building Blocks and Solutions

Data Model to support queries	Information Models	FHIR
Query Results	Result Vocabularies and Value Sets	FHIR + MU2 vocabularies
	Result Structure	FHIR Resources
Query Structure	Query Vocabularies and Value Sets	FHIR + MU2 vocabularies
	Query Structure	FHIR
Security Layer	Authentication/Authorization	OAuth2 profiles*
		TLS
Transport Layer	Application Transport Protocols	
	Basic Transport Protocols	HTTP

DAF Data Element IG

☐ RESTful FHIR based Query Stack for Data Element based access

DAF – Building Blocks and Solutions

Layer	Building Block	RESTful FHIR (Data Element)	RESTful FHIR (Document Metadata)	SOAP (Document Metadata)
Data Model to support queries	Information Models	FHIR	FHIR + XDS Metadata	ebRIM + XDS Metadata
Query Results	Result Vocabularies and Value Sets	FHIR + MU2 vocabularies	FHIR + MU2 (CCDA vocabularies)	MU2 (CCDA vocabularies)
	Result Structure	FHIR Resources	FHIR Resources + CCDA	CCDA
Query Structure	Query Vocabularies and Value Sets	FHIR + MU2 vocabularies	FHIR + XDS Metadata	XDS Metadata
	Query Structure	FHIR	IHE MHD v2 FHIR based Profile	XCA
Security Layer	Authentication/Authorization	OAuth2 profiles*	OAuth2 profiles*	IHE XUA (SAML)
		TLS	TLS	Mutual TLS
Transport Layer	Application Transport Protocols			SOAP 1.2
	Basic Transport Protocols	HTTP	HTTP	HTTP

DAF Data Element IG

DAF Document IG

- RESTful FHIR based Query Stack for Data Element based access
- RESTful FHIR based Query Stack for Document Metadata based access
- SOAP Query Stack for Document Metadata based access

* - OAuth2 profiles still evolving

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SDO Collaboration

DAF S&I Initiative – IHE PCC collaboration published
DAF IHE White Paper in Fall 2014
- Identified existing IHE profiles that can be leveraged for Document Access
- Identified emerging FHIR based profiles for Document Access
- Identified gaps for discrete data element access

DAF S&I Initiative – HL7 Collaboration
- Developed an Implementation Guide using the FHIR standard for data element access
- HL7 PSS approved in Fall 2014 and published for DSTU2 in May 2015. (Currently under Ballot Reconciliation)
- Data Element list based on MU2 + Community Input
- Publish IG in Fall 2015 (along with FHIR DSTU 2 publication timeline)

DAF S&I Initiative – IHE USA / IHE PCC Collaboration
- Developed an Implementation Guide using the MHD v2 (FHIR based) profile for Document Access
- Developed implementation guidance for existing SOAP stack based on XCA
- Implementation Guide submitted to IHE for balloting
- IG expected for final publication Fall 2015 (following IHE processes)

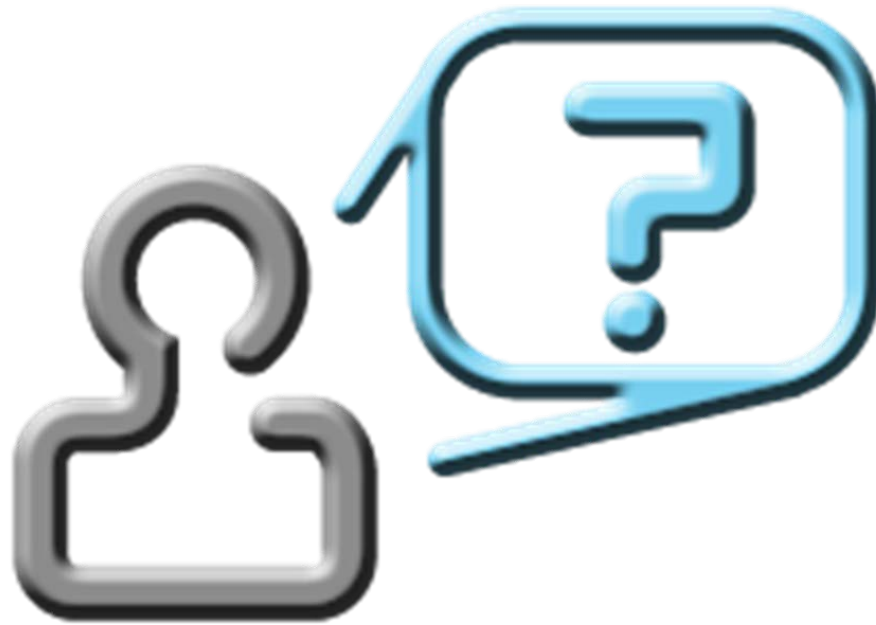# Relationships with Industry Projects

- **Argonaut**
  - ONC participating in Argonaut implementation efforts
  - <u>Relationship</u>: DAF FHIR profiles are being reused by Argonaut

- **HEART**
  - Harmonize and develop set of privacy and security specifications/ profiles to enable individuals to control access to RESTful health related resources using Oauth 2, OpenId Connect, UMA : http://openid.net/wg/heart/charter/
  - <u>Relationship</u>: DAF Security layer could potentially reuse profiles/ specifications developed by HEART for specific use cases

Expected Outcomes

- Empower providers to manage their patients effectively across care settings by accessing the appropriate data required for treatment and care transitions.

- Allow innovative applications outside of the EHR to provide value added functions to improve patient care by accessing EHR/Clinical data within an organization.

- Provide components that can help establish a national data infrastructure to access data **securely** and in an **interoperable** manner using APIs
  - Interoperable components include - Transport, Security, Content, Vocabulary, APIs

Questions?

Useful Links

- **DAF Homepage**
  - http://wiki.siframework.org/Data+Access+Framework+Homepage
- **DAF Initiative Signup**
  - http://wiki.siframework.org/Data+Access+Framework+Join+the+Initiative
- **DAF Charter**
  - http://wiki.siframework.org/Data+Access+Framework+Charter+and+Members
- **DAF Standards, Harmonization and Implementation Activities**
  - http://wiki.siframework.org/DAF+Standards+Harmonization+and +Implementation
- **DAF HL7 FHIR IG**
  - http://hl7.org/fhir/2015May/daf.html
- **DAF IHE White Paper**
  - http://ihe.net/uploadedFiles/Documents/PCC/ IHE_PCC_White_Paper_DAF_Rev1.1_2014-10-24.pdf