HL7 FHIR Implementation Projects

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Important US FHIR Projects

- ONC FHIR Implementation Guides
  - SDC
  - DAF
  - QI-Core
- US Realm Implementation Guide
- Project Argonaut
- HSPC
Structured Data Capture

Definitions:
- Define a set of ‘data elements”
- Define a “Form” – a series of questions to answer
- Associate questions with data elements

Processes
- Present the form in a nice UI
- Ask someone to answer the questions
- System may pre-populate with known values
- Read the data elements out of the answers
Structure Data Capture

- Many uses
  - Ad-hoc collection of data from humans
  - Delegate parts of UI design to end-users
  - Clinical Forms associated with referrals
  - Research / Trial data collection
  - etc

- Advantage of FHIR: integrate with the wider health eco-system
Data Access Framework

- Rules to support queries between systems within and across enterprises
- Rules about:
  - How access is granted (e.g. authentication/authorization)
  - What kind of queries are allowed
  - Expected content of return resources (based on US Meaningful use)
Data Access Framework

- Patient Details
- Problems
- Medication allergies
- Laboratory Orders / Reports / Values
- Encounters
- Family Health History
- Immunizations

- Medications:
  - prescriptions
  - dispenses
  - administrations

- Procedures
- Smoking Status
- Vital Signs
- + supporting stuff

Note: not complete coverage of the MU common data set
QI-Core

- Sponsored by CMS / ONC
- A uniform way for quality measures to refer to clinical data
  - Base rules data must conform to so quality measures can be checked
  - May also be suitable for decision support
  - Underlying Logical model called “QUICK”
- Overlaps with DAF – (mostly) consistent
QI-Core

- Clinical Data (problems, allergies..)
- Medication & Immunization history
- Patient, Encounters, Care Team
- Workflow (communications, procedure requests…)
- Supporting data (device, location…)
US Implementation Guide

- Common rules for using FHIR in USA
  - US specific extensions e.g. race, ethnicity, direct address
  - US terminology bindings e.g. RxNorm
  - US common identifiers & profiles e.g. provider

- Does not exist (yet)
  - Implicitly derived from DAF IG at the moment
  - Under development now
Project Argonaut

“Rapidly develop a first-generation FHIR-based API and Core Data Services specification to enable expanded information sharing for electronic health records and other health information technology based on Internet standards and architectural patterns and styles”
Project Argonaut

- **Scope =** Meaningful Use Common Data Elements + Document Access

- **Participants =** athenahealth, BIDMC, Cerner, Epic, Intermountain, Mayo, MEDITECH, McKesson, Partners, SMART, Advisory Board, Accenture, Surescripts
MU Data Access

- Prototype Implementation of DAF
  - Uses Smart on FHIR (per DAF)
  - Doesn’t impose all DAF security or integrity requirements
  - Only implementing a small fraction of the DAF query capabilities
  - Content model based on DAF, but diverging based on implementer experience
  - Primary input to next version of DAF
Document Access

- Based on IHE MHD specification
  - Uses Smart on FHIR instead of IUA
  - Only a narrow subset of MHD scope (read-only, no manifests or folders)
  - Based on DSTU2 not DSTU1
  - Intended to be consistent with next MHD
Project Argonaut

- Still in progress
- Participation welcome
- Check the Project Argonaut presentation
HSPC

- “Healthcare Services Platform Consortium”
- Improve health by creating a vibrant, open ecosystem of interoperable applications, knowledge, content, and services
- Accelerating the creation, sharing and delivery of promising software applications at the point of care.
- True semantic interoperability
Semantic Interoperability

- Project Argonaut:
  - How to hook into EHR applications
  - How to get manage authorization
  - How to find content
  - Basic rules where possible
  - Otherwise, content quite variable e.g. Different coding, units, methods of capturing clinical facts

- Common way to find content. But not common content
Semantic Interoperability

- Argonaut is enough for applications that find and display data
- Argonaut is not enough for applications that process data – no portability
- HSPC aims to fix this by fixing clinical content models
  - Consistent coding, units, clinical patterns
- Imposes rules on clinical practice / data collection
HSPC Compatibility

- Build on top of US Implementation Guide
  - For US usage
- Be consistent with DAF
- Build on top of Argonaut profiles
- Apply extra rules around consistent data
Consistency across Projects

- Consistency is a goal
- Membership and editorial process for all projects highly overlapping
- Deviations due to differing requirements and timelines
- Reconciliation is an ongoing task