Using HL7 FHIR to support interoperability: Lessons from Intermountain Healthcare

Scott P. Narus, Ph.D.
Medical Informatics Director
Intermountain Healthcare
Intermountain Healthcare

- Integrated Health Delivery Organization
  - HQ in Salt Lake City, UT
  - Spans all of Utah and Southern Idaho
- 22 Hospitals, 185+ clinics
- Strong Hx of Informatics Innovation (homegrown solutions)
- Recent implementation of Cerner EMR
A New Direction for Health IT

- Create an open, standards-based API to iCentra
- Support standards efforts for interoperability
Coincidentally…

- DSTU 1 published by HL7 in Feb 2014
- Intermountain & Cerner agree on FHIR as API standard

- Intermountain & Cerner agree on SMART as app interop standard
- Joint support for SMART on FHIR
- Participation (w/ other vendors) at HIMSS 2014, demonstrating interoperable SMART on FHIR apps
Intermountain / Cerner Working Relationship

• Joint oversight committee
• Weekly & Monthly meetings
• Project review/approval process
• Cerner develops FHIR services
• Intermountain develops requirements, FHIR profiles, apps
  – Cerner helps with FHIR resource (data) mapping
• Participation with Argonauts
  – Recently joined Argonaut FHIR Bulk Data Access Workgroup
• HIMSS coordination
• “Think Days”
Intermountain Organization

- Interoperability Group
- Separate technical support group(s)
- Modeling/Terminology
- Architecture group re-forming
- Oversight by clinical operations
- Involvement with standards organizations
Accomplishments

- FHIR DSTU 2 dev & production servers
- OAuth support
- SMART app integration in iCentra
- Production release of 2 FHIR-based apps
  - PE Diagnostic/Treatment app in development
- Sharing of app enhancements across orgs/EHRs
- Use of FHIR resources for HIE, Telehealth, PH reporting
- Implementation of Publish/Subscribe services*
- SMART on FHIR sandbox development environment
• EMR Vendor provides a fairly extensive set of FHIR resources...
• ...Vendors are cautious & conservative at this point
• ...Need support for additional use cases and Write capability
Lessons Learned II

• Still need some expertise on vendor data
• Data are not always where you think they are, and they don’t always come back as expected
Lessons Learned III

• Lack of specificity in FHIR Resources
  – *US Core FHIR Profiles not enough*
  – Need *true* semantic interoperability (*FHIR Profiles*)

• FHIR supports single patient/subject queries
  – Working on population-based queries and formats (*FHIR Bulk Data*)
  – Registries and Research-related efforts?
Lessons Learned IV

- Differences in Vendor implementations of FHIR
  - Data Models
  - Search parameters and approaches

- Differences in terminology support
  - Local term mapping probably needed
Lessons Learned V

• Interoperability of apps still in early stages
• Open source apps are NOT free
• Prioritization and Governance are key
Next Steps

• Cerner contract v2.0
  – Pushing the “platform” approach
  – Intermountain driving architecture decisions
• Exercising additional FHIR resources and attributes
• Support for FHIR profiles
• Support for other interoperability standards
• Governance model for architecture, interoperable app dev, 3rd party eval, & implementation
Thank You!

Scott P. Narus, Ph.D.
Intermountain Healthcare
scott.narus@imail.org