FHIR

• FHIR: Fast Healthcare Interoperability Resources (Pronounced “Fire”)  

• The hottest thing interoperability this year  
  – Insert other jokes here...

• Based on industry best practices, with a focus on simplicity and implementability
Healthcare Standards

- Complex.... Slow...
- Hard to use and understand
- Require specialist skills, tools
- Costly
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What if it didn’t have to be like that?
REST & Resources

- REST: a pattern for using web technologies to manage information
- Resources: the building blocks that get exchanged
- Like web pages, but for computer usage
- Scalable – performance, and community
<Patient xmlns="http://hl7.org/fhir">
  <id value="glossy"/>
  <meta>
    <lastUpdated value="2014-11-13T11:41:00+11:00"/>
  </meta>
  <text>
    <status value="generated"/>
    <div xmlns="http://www.w3.org/1999/xhtml">
      <p>Henry Levin the 7th</p>
      <p>MRN: 123456. Male, 24-Sept 1932</p>
    </div>
  </text>
  <extension url="http://example.org/consent#trials">
    <valueCode value="renal"/>
  </extension>
  <identifier>
    <use value="usual"/>
    <type>
      <coding>
        <system value="http://hl7.org/fhir/v2/0203"/>
        <code value="MRN"/>
      </coding>
    </type>
    <system value="http://www.goodhealth.org/identifiers/mrn"/>
    <value value="123456"/>
  </identifier>
  <name>
    <family value="Levin"/>
    <given value="Henry"/>
    <suffix value="The 7th"/>
  </name>
  <gender value="male"/>
  <birthDate value="1932-09-24"/>
  <careProvider>
    <reference value="Organization/2"/>
    <display value="Good Health Clinic"/>
  </careProvider>
  <active value="true"/>
</Patient>
Kinds of Resources

- Clinical Concepts
  - Allergy, Problem, Family History, Care Plan
  - Medication Management
- Administrative Concepts
  - Person, Patient, Organization, Device, Facility
- Infrastructure Functionality
  - Document, Message, Conformance/Profiling
- Financial Management
  - Claims / Reimbursement, Contract
Using Resources

• Classic Web RESTful approach
  – Simple approach led by Facebook, Twitter, etc.

• Documents / Messages
  – Same deployment as HL7 v2 / CDA
  – But common technical base

• Services (SOA)
  – Fit into existing enterprise architectures

• Portability – common structures everywhere
Extensions

• Managing extensibility is a central problem
• Everyone needs extensions, everyone hates them
• FHIR tames extensibility
  – Built in extensibility framework (engineering level)
  – Define, publish, find extensions
  – Use them
• This tames the overall specification
FHIR Ethos

• Simplicity / Web alignment
• Implementation focused
  – Reference Implementations (C#, Java, etc)
  – Publically available test servers (now)
  – Connectathons
• Freely available
  – http://hl7.org/fhir
  – Creative Commons Public Domain
Status

- 1st DSTU published Feb 3rd 2014
  - (Draft Standard for Trial Use)
  - Widespread Community Growth and Adoption

- 2nd DSTU published Sept 23rd 2015
  - Extensive change based on implementer feedback
  - Introduction of Maturity Model
2nd DSTU Key Changes

• API
  – Simplify collections / transactions
  – Significant enhancements to search

• Introspection
  – Massive upgrade to capabilities

• Domain Resources
  – Simplification, enhancements
  – X new resources (all modules)
FHIRE & CCDA

- CCDA is mandated by Meaningful Use
- FHIRE is a new specification
- FHIRE is not a replacement for CCDA (yet)
- Project to migrate CCDA content to FHIRE
- This year: CCDA $\leftrightarrow$ FHIRE interchange projects and infrastructure
- Document and data exchange will continue to co-exist
Key FHIR Projects

• SMART
  – Key integration framework for many uses of FHIR

• Argonaut
  – JASON Taskforce – API based access to data
  – Patient / Provider portals, data exchange

• HSPC
  – API based access to data
  – EHR plug-in framework
Follow Up

• Read the spec: [http://hl7.org/fhir](http://hl7.org/fhir)
• Follow #FHIR on Twitter
• Become part of the community:
  – Come to a Connectathon!
  – Join us at [http://fhir.org](http://fhir.org)
  – Start a project using FHIR
  – Come to the next meeting (Montreal in May)
FHIR

- Simple.... FAST...
- Easy to use and understand
- Standard skills, tools
- Cost-effective information sharing