

# What's new in FHIR R4

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# Overview

- HL7 Organizational Changes
- Infrastructural Changes
- Additional functionality
- Breaking Changes
- Changes in the community

# HL7 Organizational Strategy

1. Enhance the public image and achieve recognition by stakeholders as the leading SDO for worldwide health data interoperability standards
2. Secure long-term sustainable revenue to realize the vision and improve customer experiences (internal and external)
3. Establish FHIR as the primary standard for global health data interoperability
4. Enhance and maintain quality of and accessibility to HL7 standards in current use

## Establish FHIR as the primary standard

- Increase understanding of FHIR usage and value of usage worldwide (Immediate)
- Achieve symbiotic link of brand and financial benefit between HL7 and FHIR. (Immediate)
- Demonstrate the value of FHIR in enabling interoperability (Midterm)
- Ensure resources are most effectively focused to enhance FHIR (Midterm)

# FHIR R4 Goes Normative

- Some parts of R4 will be balloted as normative
  - Definition Infrastructure, Data types, XML and JSON formats, RESTful API
  - CodeSystem, ValueSet, ConceptMap, StructureDefinition
  - Patient
  - Observation
- The rest of R4 will still be Standard for Trial Use (STU)
- Normative parts fall back to STU
- Normative = no breaking changes (? Meaning)

# FHIR Certification

- FHIR Proficiency Certificate being introduced now
  - Basic Test for knowing the specification (R3)
  - Can sit and pass at WGMs or any time/any where
- FHIR Professional Certification coming
  - Hard – requires deep knowledge of the specification
  - Prerequisites: practical experience, creating resources
  - Introduction in 2018

# Smart App Launch

- Formalising the Application Launch Protocol
  - Profile on Oauth / openID Connect
  - Application Integration Details
- Currently undergoing reconciliation
- Not actually linked to R4 (applies R2 -> future)
- Most uses of FHIR should/will use Smart App Launch Protocol
- Integration plan: <http://www.healthintersections.com.au/?p=2746>

## Inter-Version Support

- Paying more attention to supporting multiple versions
- New Orleans Connection Stream
  - [http://wiki.hl7.org/index.php?title=201801\\_Versioned\\_API](http://wiki.hl7.org/index.php?title=201801_Versioned_API)
- Defines the media type parameter “fhir-version” e.g.
  - Accept: application/fhir+json; fhir-version=3.0
- TBD: Not all places have a media type...



# GraphQL Support

- Describe how to use GraphQL with FHIR queries
- GraphQL allows a server to:
  - Specify which fields are returned by the server
  - Resolve and inline references to other resources (embedded search)
  - Collapse un-needed container elements
  - Slice lists into named elements
- GraphQL is a very powerful technique for clients
  - Currently supported by [test.fhir.org](http://test.fhir.org) and [hapi.fhir.org](http://hapi.fhir.org)
  - R client supports and leverages graphql abilities

# Bulk Data Support

- Expand FHIR to support extraction of large amounts of data
  - HTTP API for long running requests
  - Format suitable for large amounts of data (nd-json)
  - Semantics to request a large amount of data
- Connectathon stream at New Orleans:
  - [http://wiki.hl7.org/index.php?title=201801\\_Bulk\\_Data](http://wiki.hl7.org/index.php?title=201801_Bulk_Data)

# Breaking Changes

- Community Consultation is happening for FMM 4+ content
  - Rename ValueSet.compose to ValueSet.definition (Vocab)
  - Question on the use of related types with Observation (OO)
  - Proposal to adopt GitHub Flavored Markdown (FHIR-I)
  - Remove Imaging Manifest (II)
  - <https://onfhir.hl7.org/2017/10/05/proposed-breaking-changes-for-fhir-r4/>
- There's lots of other breaking changes
  - We only consult on FMM 4+ content
  - Will continue to maintain interversion conversion maps

## New Content in the specification

- Public Health Case Reporting and Reportability Responses
- Occupational Data for Health
- Laboratory Test Catalog
- BiologicallyDerivedProduct ( blood transfusion, and hematopoietic cell transplant material.)
- Medical Device Nomenclature/Vocabulary Service
- Insurance Plans
- Improvements to Subscription
- Medication Registration Process?

## Definition Process

- Elevate W5 to a formal logical model
  - Generate Code for logical models as façades on resources
- Additional quality and consistency work in the resource definitions
  - Leverage RDF definitions in this work
- More mappings to definitional resources
  - Including SNOMED CT

# FHIR Foundation

- HL7 develops the FHIR standard
  - Governance, Process and Policies focused on standards publishing
  - Ballots, Documents, Publishing
- FHIR supports the Implementation community / Process
  - Provides Infrastructure (e.g. \*.fhir.org) to build the community
  - Supports Collaboration Groups that don't need the formal process
  - Publishes Implementation Guides that are not balloted by HL7
  - Trusted 3<sup>rd</sup> party, including (possibly) run time servers
  - <http://registry.fhir.org> – the most important FHIR Foundation service

## What else?

- Improve our support for national and domain specific adoption programs
- Support / Encourage national adoption (Europe/Africa)
- Improve support for Aggregate reporting
- Further develop cds-hooks
- More investment in fhir.org services to support the community
- Introduce a re-usable formal review process (A la CKM)
- End point discovery

## What's new in R4

- Changes reflect growing maturity of the specification
- There's still plenty to be done
- We have strong support this year from US ONC (thanks)
  
- Questions...