FAQ: HL7® FHIR® and its Implications

HIMSS Interoperability & Standards Committee
FHIR and Public APIs Sub-Committee

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What is FHIR?

HL7® FHIR® stands for Fast Healthcare Interoperability Resources.

- A data exchange draft standard (Draft Standard for Trial Use – DSTU)
- Developed and published by Health Level Seven (HL7)
- Potential to implement without the complexities of the earlier HL7 versions
- Facilitates real time exchange of data using web technology

How is FHIR different?

Next generation standard based on web technology for fast, flexible and cost-effective development.

- FHIR supports four paradigms of interoperability:
  - RESTful web services
  - Documents
  - Messages
  - Services
- Unlike other standards that separately support these paradigms, but require an interface to move from one to the other, FHIR has the same content in all four paradigms.
- You can represent a clinical attribute like a blood pressure reading using FHIR and use it unchanged in messages, documents, RESTful approaches and services.

What is a FHIR Resource?

The basic building block in FHIR is a Resource.

All exchangeable content in FHIR is defined as a resource. Resources have standard, agreed-upon atomic data elements that have consistent meaning across sharing entities.

Resources all share the following set of characteristics:

- A common way to define and be represented, building them from data types that define common reusable patterns of elements
- A common set of metadata
- A human readable component

Resource types include infrastructure, administrative and clinical elements such as the following:

Patient	List	Care Plan
Composition	Family History	Medication
Questionnaire	Organization	Media

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What is a FHIR Profile?

A Resource Profile is a statement of use of one or more FHIR Resources for a particular use case.

A Resource Profile has three main parts:

1. A metadata section that describes the profile, and supports registry searching
2. Structures that define and describe how a Resource or Data Type is used
3. Extension Definitions that define extensions that can be used in structures

A FHIR Profile may include constraints on Resources and data types, controlling how terminology is used (terminology binding) in extension definitions.

Common profiles will be included as part of future versions of the FHIR specification. Profiles will also be made available on a public server that will allow developers to access them. A FHIR Profile is considered analogous to an implementation guide for a specified use case.

Why is FHIR considered an emerging healthcare interoperability standard?

FHIR is a next generation scalable standards framework that is web services based and supported by current exchange infrastructure.

- FHIR can construct and deconstruct CDA documents from various data sources and systems.
- FHIR is created by implementers for rapid, flexible and open application development to reduce cost and complexity.

Is there a cost for FHIR?

FHIR is an HL7 standard licensed for use at no charge.

- FHIR is based on the principle that it allows development to occur freely and quickly.
- FHIR aims to follow the 80:20 rule:
  - Developing FHIR Resources that are common to 80% of existing systems
  - Provides extension mechanisms that are available for more specific use cases

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What could I do with FHIR if I adopt it?

Consider FHIR for new requirements where applicable/possible.

- FHIR provides the means to create RESTful APIs.
- Map existing internal interfaces to FHIR to enable easier external interfacing.
- Connect systems with FHIR APIs that are more easily created and more cost effective than traditional HL7 V2 interfaces.
- FHIR addresses some of the new use cases such as web, mobile and cloud.
- Enable external decision support systems to independently access data stored in various end user healthcare systems through APIs.

What is the timeline for FHIR?

The FHIR timeline is determined by the standards development processes of HL7.

- DSTU 1.0 was published in January 2014.
- DSTU 2.0 will be balloted in the May 2015 HL7 ballot cycle:
  - It includes additional Resources and updates previous Resources based on experience with use in DSTU 1.0.
- It is anticipated that a normative version of HL7 FHIR will be balloted by 2017.

Is FHIR being used today?

There are several projects underway for the use of FHIR.

- The Argonaut Project: The Argonaut Project is a joint project between HL7 and various healthcare and vendor organizations and is aimed to develop a first-generation API and Core Data Services specification to enable expanded information sharing for electronic health records, documents, and other health information based on the FHIR specification.
- Chat for FHIR implementations - https://chats.fhir.me/feeds/skype/implementers.html
- The Health Services Platform Consortium (HSPC) is a non-profit membership organization formed by a collaboration of healthcare organizations, software vendors and academia focused on building an open platform based on FHIR to allow rapid development of healthcare applications. The platform will include tools for developers and a sandbox for development.

Acknowledgements

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Appendix A: Acronym Listing

Acronym	Organization / Definition	Website
AAFP	American Academy of Family Physicians	www.aafp.org
AAP	American Academy of Pediatrics	www.aap.org
ANSI	American National Standards Institute	www.ansi.org
ASTM	American Society for Testing and Materials	www.astm.org
CCD	Continuity of Care Document	
CCR	Continuity of Care Record	
CD	Concept Descriptor	
CDA	Clinical Document Architecture	
C-CDA	Consolidated Clinical Document Architecture	
CMS	Centers for Medicare & Medicaid Services	www.cms.gov
DSTU	Draft Standard for Trial Use	
EHR	Electronic Health Record	
FHIR®	Fast Healthcare Interoperability Resources	
HIMSS	Healthcare Information & Management Systems Society	www.himss.org
HITSP	Healthcare Information Technology Standards Panel	
HL7®	Health Level Seven	www.hl7.org
IG	Implementation Guide	
IHE	Integrating the Healthcare Enterprise	www.ihe.net
LOINC	Logical Observation Identifiers Names and Codes	
NIST	National Institute of Standards and Technology	www.nist.gov
ONC	Office of the National Coordinator for Health IT	www.healthit.gov
S&I	Standards & Interoperability	
SDO	Standards Development Organization	
SNOMED CT	Systematized Nomenclature of Medicine Clinical Terms	

Appendix B: References

HL7® FHIR® Resource

http://www.hl7.org/implement/standards/fhir/

The Healthcare Services Platform Consortium

https://healthservices.atlassian.net/wiki/display/HSPC/Healthcare+Services+Platform+Consortium

HL7 Sponsored HIMSS Interoperability & Standards Committee Panel Session — FHIR®: The Future of Interoperability

https://live.blueskybroadcast.com/bsb/client/CL_DEFAULT.asp?Client=556675&PCAT=8341&CAT=8341&Review=true

FHIR® Executive Summary Video

https://vimeo.com/112905640

The Argonaut Project

https://hl7-fhir.github.io/argonauts.html

HL7® FHIR® for Executives

http://www.ringholm.com/persist/FHIR_for_executives.pdf

Interoperability Paradigms of HL7® FHIR®

http://www.corepointhealth.com/geni/interoperability-paradigms-hl7-fhir?utm_campaign=Blog%20Posts&utm_content=13352988&utm_medium=social&utm_source=twitter

Organizations Interested in FHIR®

http://wiki.hl7.org/index.php?title=Organizations_interested_in_FHIR