## FAQ: HL7® FHIR® and its Implications

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

### 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:

<table>
<thead>
<tr>
<th>Patient</th>
<th>List</th>
<th>Care Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>Family History</td>
<td>Medication</td>
</tr>
<tr>
<td>Questionnaire</td>
<td>Organization</td>
<td>Media</td>
</tr>
</tbody>
</table>
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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:
  o Developing FHIR Resources that are common to 80% of existing systems
  o 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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This resource was developed by the following volunteers from the Healthcare Information and Management Systems Society (HIMSS).

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# Appendix A: Acronym Listing

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

FHIR® Executive Summary Video
https://vimeo.com/112905640

The Argonaut Project
https://hl7-fhir.github.io/argonauts.html

FHIR® for Executives

Interoperability Paradigms of HL7® FHIR

Organizations Interested in FHIR