Special Lecture | JCMI/APAMI Special Keynote Session | HL7 FHIR

[JCMI/APAMI Special Keynote Session 1] HL7 FHIR

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[SKS-1-01] All About FHIR®

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COVID-19 has defined interoperability in true and understandable terms. Interoperability has many working parts, and all must work correctly together to be effective. Simple requirements include being able to identify patients uniquely everywhere. The aggregation of clinical data, imaging data, test data results, and travel requires precise identification of persons. We ust all speak the same language. We must have consistency and uniqueness in how we code the data including diseases, laboratory tests, race, gender, medications, and other clinical data. We must all collect the same data the same way. We must then make that data sharable with proper privacy, authentication, and authorization, prevalence, and governance. We need to identify what data we share, when and why. Finally, we must be able to transport the data in an interoperable fashion – the right data for the right patient to the right place at the right time.

That is the role HL7 International® FHIR® standard has the potential to serve. This presentation will introduce FHIR (Fast Healthcare Interoperable Resources) as a global solution to the interoperable sharing of data. FHIR is built on REST (Representational State Transfer), a pattern for using web technologies to manage data and APIs.

All About FHIR®

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The COVID-19 pandemic is teaching us many lessons about the inadequacy of our healthcare systems. We need to quickly identify COVID hot spots. We need to track carriers of the disease and identify the people who have come in contact with a COVID-positive individual. COVID-19 is a disease we know little about, and we need to quickly aggregate data across multiple sites – large and small, city, urban, and rural. We need to be able to track the supplies and resources need to care of COVID patients and of their healthcare providers. We need to anticipate needs and deliver resources as needed. COVID-19 has no country boundaries, and we need to be global in controlling the spread of the disease.

COVID-19 has defined interoperability in true and understandable terms. Interoperability has many working parts, and all must work correctly together to be effective. Simple requirements include being able to identify patients uniquely everywhere. The aggregation of clinical data, imaging data, test data results, and travel requires precise identification of persons. We must all speak the same language. We must have consistency and uniqueness in how we code the data including diseases, laboratory tests, race, gender, medications, and other clinical data. We must all collect the same data the same way. We must then make that data sharable with proper privacy, authentication, and authorization, prevalence, and governance. We need to identify what data we share, when and why. Finally, we must be able to transport the data in an interoperable fashion – the right data for the right patient to the right place at the right time.

That is the role HL7 International® FHIR® standard has the potential to serve. This presentation will introduce FHIR (Fast Healthcare Interoperable Resources) as a global solution to the interoperable sharing of data. FHIR is built on REST (Representational State Transfer), a pattern for using web technologies to manage data and APIs. Its content is based on Resources, which are essential, portable information building blocks easily assembled into working systems. FHIR supports four flexible paradigms: REST, Messages, Documents, and Services. FHIR supports rigorous semantics, and is designed to support 80% of the require data for health. The rest are accommodated by extensions. The FHIR Maturity Model indicates the stability of the resources. FHIR is open source. APIs access data – pull what you need instead of taking what is pushed. Resources are combined into Profiles to solve clinical, financial, and administrative problems in a precise way. Profiles are the framework for defining services. Profiles document constraints and extensions for one or more resources.

SMART on FHIR is a web App that enables vendors to create apps that seamlessly and securely run across healthcare systems. CDS Hooks provides clinical decision support services that are invoked by a hook in an EHR system. Bulk FHIR enables the exchanging of medical records for an unlimited number of patients or study subjects. Bulk FHIR supports data analytics for population health, value-based care, clinical trial design and pharmaco-vigilance.

HL7 has created a HL7 FHIR Accelerator Program to permit focus groups of common interest to develop Implementation Guides or other informative documents to aid in the implementation of FHIR in their areas of interest. Current Accelerators include Argonaut, Carin, DaVinci, Gravity, CodeX, and Vulcan. FHIR is helping to open up the world. HL7 supports a variety of meetings such as Connectathons where FHIR applications are tested and advanced and Development Days, and a wealth of educational materials

This presentation will provide details and examples of these topics.

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