DigiHealthDay™ Premeeting Workshop: Data Integration and Interoperability

May 13- 14, 2021, 14:00-17:15 (CEST)

ABSTRACT

The objectives of this workshop are to:

- Generate knowledge in data integration and interoperability with experience in a controlled environment
- Interact with the different devices of the DIT-ECRI lab
- Identify how to use semantic standard terminologies in the interoperability process
- Understand how the HL7 messaging and HL7 CDA flow in an interoperability context, using an interoperability engine
- Understand the FHIR resources and interact with an FHIR server
- Learn the principles of DICOM standard
- Understand the role and practice with some tools of IHE
- know the principles in data integration and data sharing

Agenda

DAY 1. THEORETICAL CONCEPTS ON DATA INTEGRATION AND INTEROPERABILITY FUNDAMENTALS May 13th		
Speaker	Time	Topic

Jonathan Okereke	14:00 - 15:30	• Presentation
		  ○ Context of the workshop, a brief description of the context and the methodology and goals of the activity
		
		• Theoretical Concepts
		  ○ Introduction to Data Integration.
		  ○ Medical Informatics Initiative
		  ○ Federated Health Information Exchange
		  ○ Data Sharing and Security
		  - Authentication
		  - Authorization
		  - DFN (Deutsches Forschungsnetz)
		  ○ Data privacy (GDPR §)
		  ○ Patient consent (GDPR §)
		  ○ Introduction to FHIR
		  ○ SMART on FHIR

Fernando Portilla	15:45 - 17:15	• HL7 V2 Messaging & HL7 V3 Documents
		  - Main components, parsing and sending an HL7 V2 Message. Understanding and validating an HL7 CDA Document.
		
		• Messaging HL7 V2
		  - Messaging structure
		  - Patient Demographics, ADT
		  - Order, ORM
		  - Results, ORU
		  - HL7 Parser
		  - Use cases
		
		• Clinical Documents HL7 CDA
		  - CDA Fundamentals
		  - Components
		  - CDA levels
		  - CDA Validator
		  - Use cases
		
		• HL7 FHIR
		  - Resources
		  - FHIR server
		  - REST operations

Agenda

DAY 2. SEMANTICS INTEROPERABILITY & DICOM, DATA INTEGRATION TECHNIQUES May 14th		
Speaker	Time	Topic
Fernando Portilla	14:00 - 15:30	• Terminologies and semantic interoperability Use and application of clinical terminologies in interoperability, how to use it in HL7 Messaging, CDA documents, and HL7 FHIR - SNOMED CT - LOINC - Terminology Services in FHIR
Jonathan Okereke	15:45 - 17:15	• DICOM - DICOM Standard/File Structure - DICOM Viewer(s) - DICOM Header/Metadata - PACS/RIS - DICOM ETL Process (Practical Session - Metadata to RDBMS Experiment) - Use case (Sharing DICOM images using NEXTCLOUD™) • IHE - IHE PROFILES - PIX/PDQ - BPPC, APPC (XaCML) - ATNA - XDS.b and XDS.i - MHD - Use cases (Document/Image sharing, Consent Management) • Data Integration Techniques - Medical Data Integration Architecture - ETL Pipeline (Extract, Transform, Load) - Data Lakes and Analytics - Pseudonymization techniques (GDPR §) - Consent management - Privacy-Preserving Record Linkage technique (PPRL)