Title: Clinical Documents Ontology for the National Electronic Health Record project

Presenter: Occhiuzzi, Rossana [1]; Arispe, Betania [1]; Portilla, Fernando [1]; Gil, Juan [1]; Orefice, Pablo [1]; Forcella, Jorge [1]
[1] Programa Salud.uy – AGESIC

Audience

Working groups that carry on a National Electronic Health Records (NEHR) project and should define the standard type of documents to identify in clinical information sheets.

Objectives

To define the ontology structure for the classification of documents which will be used in a NEHR project, through the use of terminology standards such as: SNOMED Clinical Terms (SNOMED CT) and Logical Observation Identifiers Names and Codes (LOINC).

Abstract

In order to carry on the implementation of a NEHR, it emerges that the identification and standardization of types of clinical documents for exchange is needed. The model of a unified Health Record states interoperability through standardized clinical documents generated from various health information systems, what leads to the need of adopting a flexible ontology which is able to support different types of clinical documents.

Considering Health Level Seven Version 3 Clinical Document Architecture release 2 (HL7 V3 CDA r2) as the standard for the exchange, the first step taken was adopting LOINC in order to adhere to the recommendation. In practice however, Uruguay counts with many documents which have been institutionalized in alignment with the National Health Comprehensive Coverage System and which goes beyond LOINC's scope.

The solution for this problem was the adoption of a document types ontology which enables us to classify documents according to its features in three axes that combined define the type of document. The first axis classifies at a high level the type of document, using LOINC. The second axis, describes the type of document on a more detailed level and in a high-level of granularity. Finally, the third axis regards to the service in which the document is created. For this last two axes the "record artifact" and "qualifier" SNOMED CT hierarchies were used, respectively.

SNOMED CT codes employed for the ontology were extracted from the International version but different terms were created in the National Extension when required and are available for use of Affilate Licensees.

As a result, this working process allows mapping between HL7 CDA and the metadata of documents which conform the NEHR repository, contributing to clinical interoperability within the Country.