

An Ontology for ICD11 Chapter 1: Certain Infectious or Parasitic Diseases.

Jean Marie RODRIGUES^{a,b},

Constant Joseph KONE ^c

Théophile Tiffet^a,

Béatrice Trombert Paviot ^a

^a *University Jean Monnet, Saint Etienne France*

^b *PCSI International Summer School Director*

^c *Félix Houphouët-Boigny National Polytechnic Institute, Yamoussoukro Cote d'Ivoire*

Abstract

Semantic interoperability is a crucial point for powering use of medical vocabulary using different healthcare terminologies for the healthcare management and sustainability.

WHO is promoting a new International Classification of Disease version 11 (ICD11) which is based on a semantic framework: semantic categories and textual definitions.

The work done in a PhD dissertation aims to develop an ontology as defined in the semantic web W3C for the ICD11 chapter 1 on “certain infectious or parasitic diseases”.

This chapter presents 1027 codes from which we selected 651 by excluding the codes needed only to insure the exclusivity and exhaustivity of any Classification system as ICD: the excluded codes contain the words “other specified” or ”unspecified”.

The first step is to perform a lexical map between the ICD codes labels and the SNOMED CT concepts labels and in a second step a match of meaning between ICD-11 text definitions and SNOMED CT concept model using EL OWL language. Both terminologies and supporting tools are accessed by their respective web browsers freely available.

The results are for the first step 615 ICD codes (94%) mapped to SNOMED CT by pre-coordination and 36 (6%) by post-coordination.

For the step 2, 490 ICD codes (75%) there is a total representation of the ICD textual definition or codes labels by the present (01/01/2022) SNOMED CT concept model and 161 ICD codes (25%) with a partial representation by the present (01/01/2022) SNOMED CT concept model and a need to use SNOMED CT grammar unvalidated attributes and qualifier values.

The results support the introduction of ICD11 and the SNOMED CT Ontology to make the different healthcare terminologies and medical vocabularies seamless for sustainability and management of healthcare systems.