Multiaxial description of the French CCAM terminology for clinical procedures and mapping on the UMLS metathesaurus

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Abstract and Objective

The French coding system of clinical procedures, the Classification Commune des Actes Médicaux (CCAM), is used in France for DRG databases and fee for services payment. CCAM is not included in the UMLS metathesaurus. This poster describes the mapping of CCAM on the UMLS Metathesaurus using MetaMap.

Keywords:

Semantic interoperability, Mapping, Terminology, Coding system, Multilingualism, Surgical (Clinical) procedures

Introduction

Each CCAM code is semi structured and comprises four letters and three numbers. The structured part consists of four letters giving relevant informations about the CCAM code on anatomy, action performed, device and access mode. The three numbers (non structured) are used to differentiate between acts with four identical letters keys. Although such information is relevant to express the meaning of CCAM codes it has never been used to map CCAM to other similar terminologies. This poster describes the mapping of CCAM on the UMLS Metathesaurus using MetaMap.

Methods

CCAM was downloaded from the Agence technique de l'information sur l'hospitalisation (ATIH) website. CCAM codes starting with YY (Additional fees) were not kept and the number of CCAM codes was 7,392 in this study. French descriptors are described in the Guide de lecture et de codage (Reading and Coding guide). In the first step we applied MetaMap directly to the labels of the anatomy and action descriptors. The retrieval of anatomical information was straightforward using the two first letters of the CCAM code. The information on the action using the third letter was more difficult because a single letter was provided in the CCAM code to represent several actions. Therefore we relied on the label of the CCAM code to identify the exact action and retrieved the relevant action verb within the label rather than relying on the third letter. In the second step we manually described a precise anatomical location for 2,844 out of 3,455 procedures which anatomical descriptor is associated to several anatomical locations.

Results

In the first step the ouput was good for actions (205 descriptors out of 331 (62%)) and satisfactory for anatomy (96 descriptors out of 194 (49%)). In the second step from 7,392 CCAM codes 3,288 (44.5%) were mapped both with the anatomy and action descriptors; 5,273 (71.3%) had at least an anatomical mapping, and 4,592 (62.1%) had at least one mapping for action.

Conclusion

We have now mapped most of the CCAM codes to at least one Metathesaurus CUI but this is not yet always precise enough. We still have to specify the mapping to metathesaurus when the same CCAM code corresponds to several actions. We nevertheless need to provide mappings for access mode too. Mappings between UMLS, CCAM and other clinical procedures terminologies is essential in order to allow international case mix comparison, and to increase semantic interoperability between different healthcare terminologies within and across different national languages.

Acknowledgments

This work was partially granted by the InterSTIS project funded by the French National Research Agency (ANR-07-TECSAN-010).