



# Smartly up-to-date: an electronic tool to compare ICD, its revisions and adaptations

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**Abstract** This poster introduces a tool, developed at the Italian WHO-FIC CC, to compare the possible extensions of ICD-10 with rubrics coming both from clinical modifications and from ICD-11 beta browser, thus potentially simplifying the transition from any ICD-10 based system to ICD-11.

## Introduction

Since its adoption in 1948, ICD has been progressively made suitable, through successive revisions, for grouping morbidity data. Worldwide, adaptations of ICD have also been adopted to respond to national requirements in terms of morbidity coding (clinical modifications). ICD-11 is now being developed, to be used in electronic health records and information systems. Member States have to use the most current ICD revision for mortality and morbidity statistics but one of the development goals of ICD-11 is to contain, in its foundation layer, all the different adaptations of ICD. A tool to compare different adaptations and different revisions of ICD would make immediately available existing resources (eg. extensions and translations) for the design of an ICD adaptation that takes into account classification possibilities already explored by other national modifications and at the same time incorporates the novelties of ICD-11.

## Methods & Materials

An informatic tool was designed to help experts in identifying ICD-10 candidate extensions from other available sources, including ICD11 beta morbidity linearization, national modifications of ICD-10, and possibly other resources such as ICD-9CM translations and the Orphanet inventory. Starting from ICD10 entities, candidate extensions are prompted from the available modifications, sorted, and when possible, merged according to lexical rules. A web-based interface is available for the user, that shows an ICD10 tree browser and on its side the set of candidate extensions, identified as above mentioned. For each ICD10 entity, the user views appropriate candidates for modification, and in a second step, can select subsets of extensions assigning them a code. Imaging to develop a new clinical modification or to maintain an existing one, the set of selected extensions can eventually be submitted via Web Services, in form of an update proposal, to a classification management platform and be adopted in the respective classification. To foster ICD11 compatibility, ICD11 entities always appear as first choices among extensions. Considering the possibility to use the tool for the Italian scenario, the English extensions of ICD-10, were linked to the Italian translation of ICD9-CM, currently used for morbidity coding.

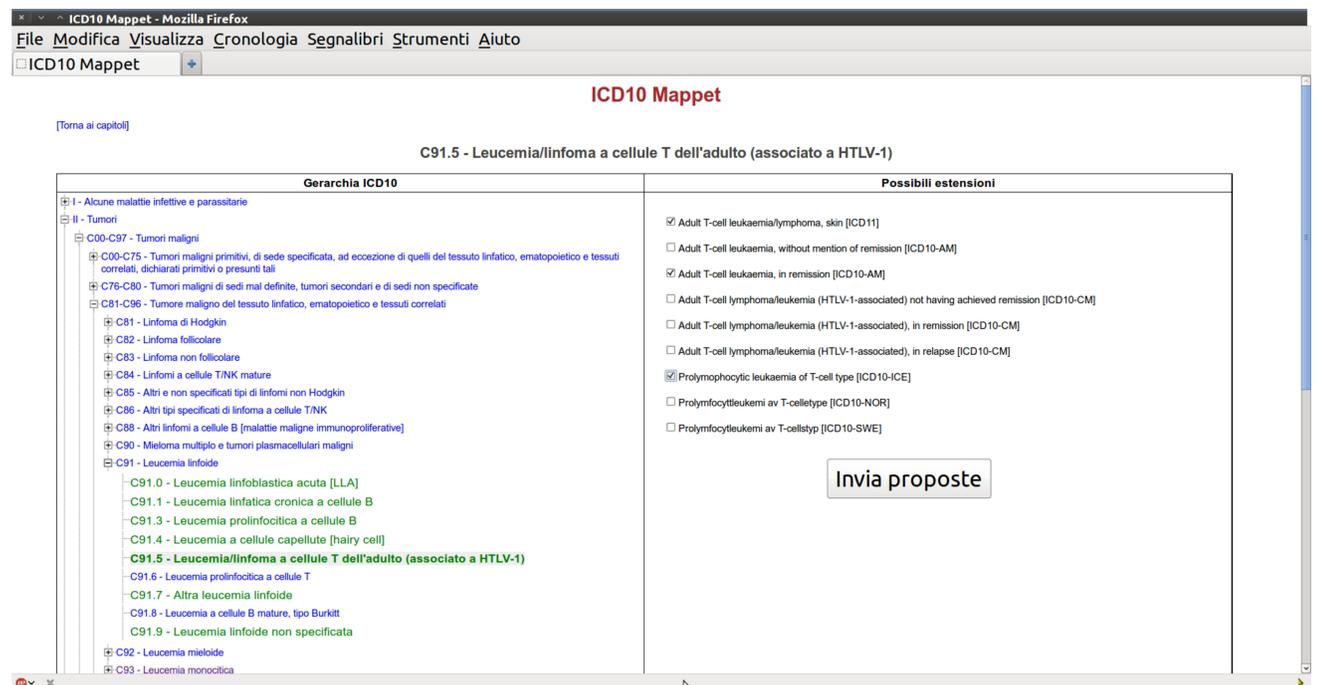
## Acknowledgements

The tool has been provisionally fed with the free online available electronic versions of ICD-10-CM, ICD-10AM, ICD-9-CM, ICD-10plus (Nordic Countries), ICD-11beta.

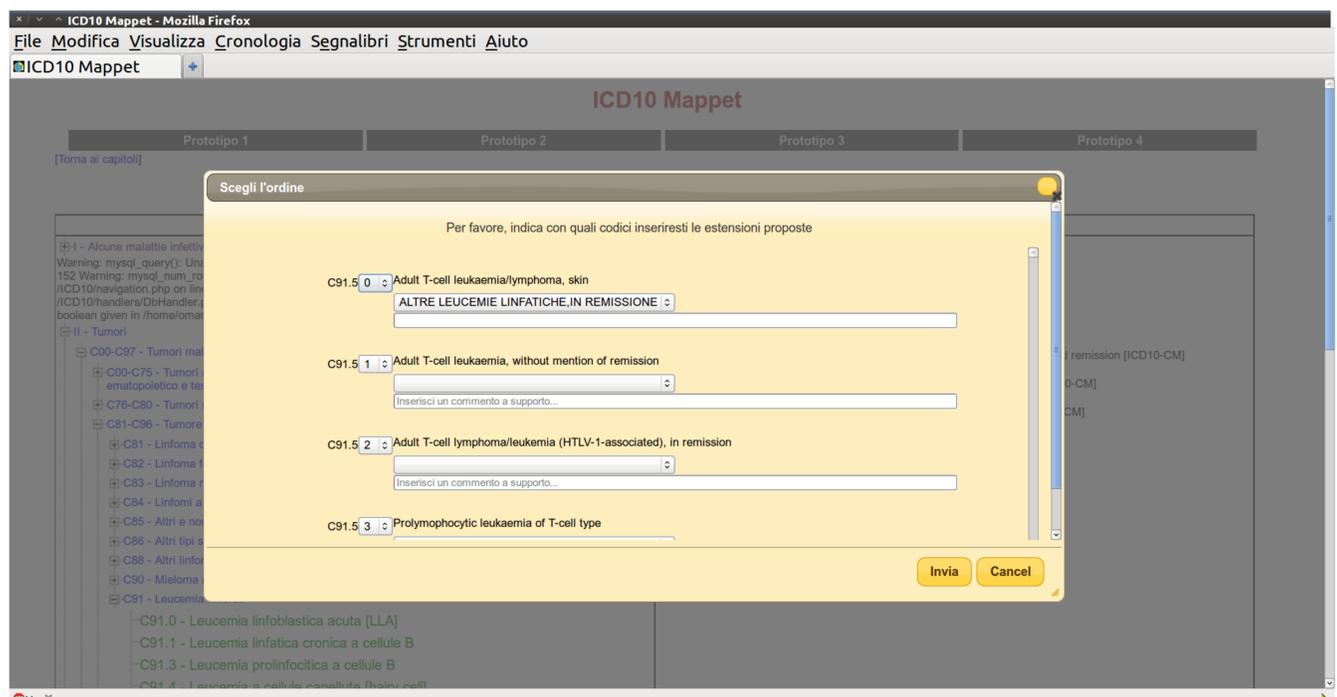
## Results

A first prototype (Figures 1 and 2) was developed that implements the above mentioned features, starting from ICD11beta (accessed through the new URI API), ICD10-CM, ICD10-AM, ICD10+ (Nordic Countries).

**Figure 1 – Snapshot of the proptotype window: on the left the Italian ICD-10 Vol. 1 hierarchy for adult Tcell leukemia/limphoma; on the right, possible extensions and relative source.**



**Figure 2 – Snapshot of the window for automated code assignment of selected extensions, editing of a prompted translation from available sources, optional commenting feature**



## Conclusions

The tool enables the development and maintenance of clinical modifications of ICD-10 and facilitates their representation as linearizations of ICD-11. Such representation simplifies the transition from any ICD-10 based system to ICD-11.

## References

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- (2) C. Çelik, R. Jacob, T.B. Üstün Translation Platform for ICD 11, Brasilia WHO-FIC Network annual meeting (2012)

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