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ICD10 Online in Italian: new perspectives for users, epidemiologists and coders

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Abstract The availability of an updated ICD10 is crucial for research purposes and correct data interpretation. With the intent to provide such a useful tool, the National Institute of Statistics (Istat) disseminated the ICD10 in the newly designed System of the Classifications. In this work the strategies to increase the usability of the ICD10 and the results achieved by disseminating this Classification in a web platform are described.

Introduction

In Italy, ICD10 is used by the Italian National Institute of Statistics (Istat) for Causes of Death (CoD) coding since reference data year 2003. Version 2009 is being now used. Nevertheless, the version available for users is based on 1999 WHO updates produced by the Minister of Health as paperback.
In order to provide metadata of CoD documentation and to provide a valid support for coders, Istat made an effort in the dissemination of ICD10 through the newly implemented System of Classifications, a web based tool for browsing classifications used in official statistics.
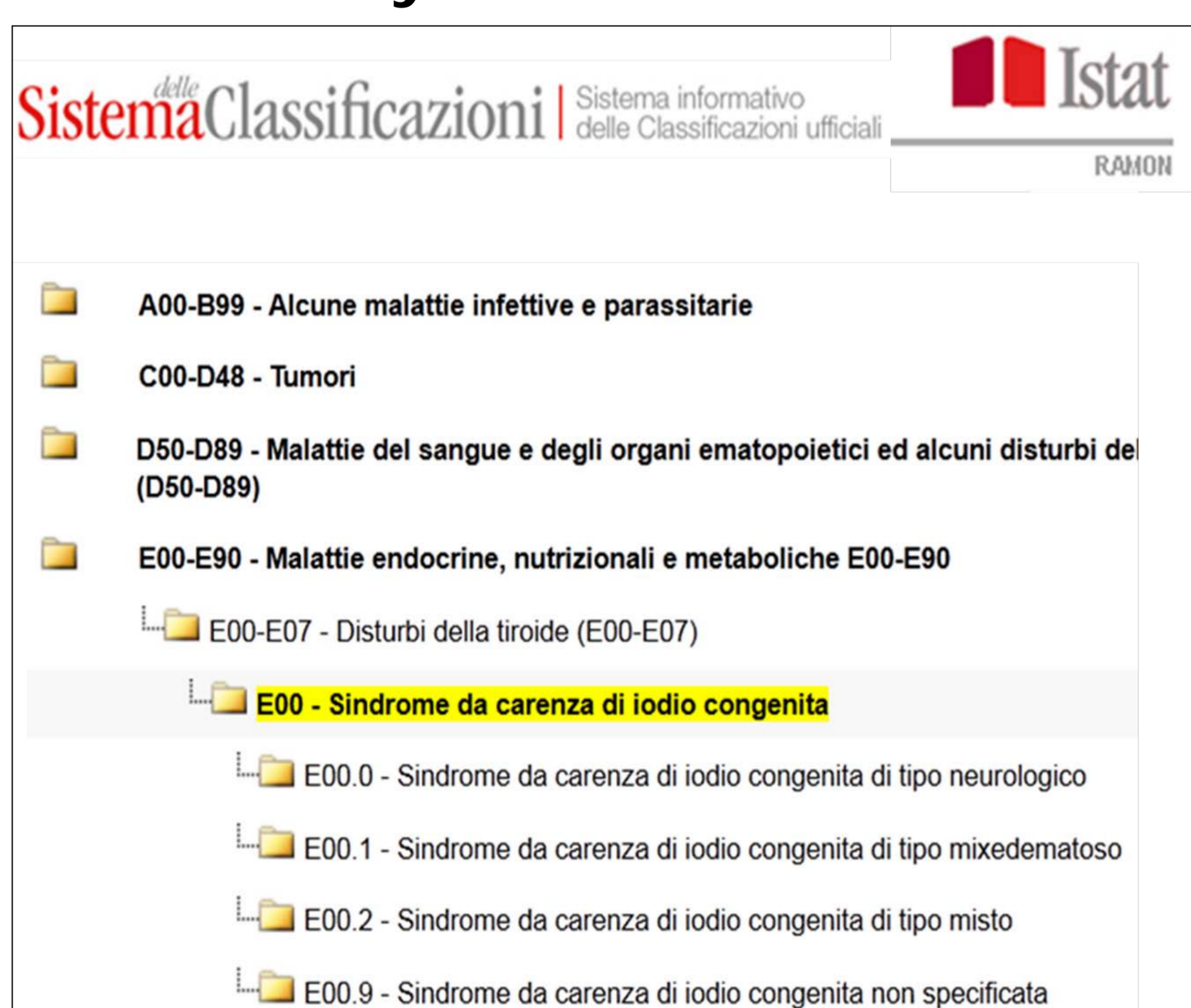
Methods & Materials

A web application was designed in order to navigate the ICD10 and provide all the useful information for coding: hierarchic structure of the classification, inclusions, exclusions, dagger/asterisk codes.
Moreover, a module for the string search has been developed, based both on the Volume I and the Volume III. In this module, a system of string standardization and synonyms has been implemented in order to return the largest number of search results and the minimum number of false positive results.

All the information needed for the ICD consultation as well as the WHO updates up to 2009 were entered in a specific database compatible with Istat system of classifications.
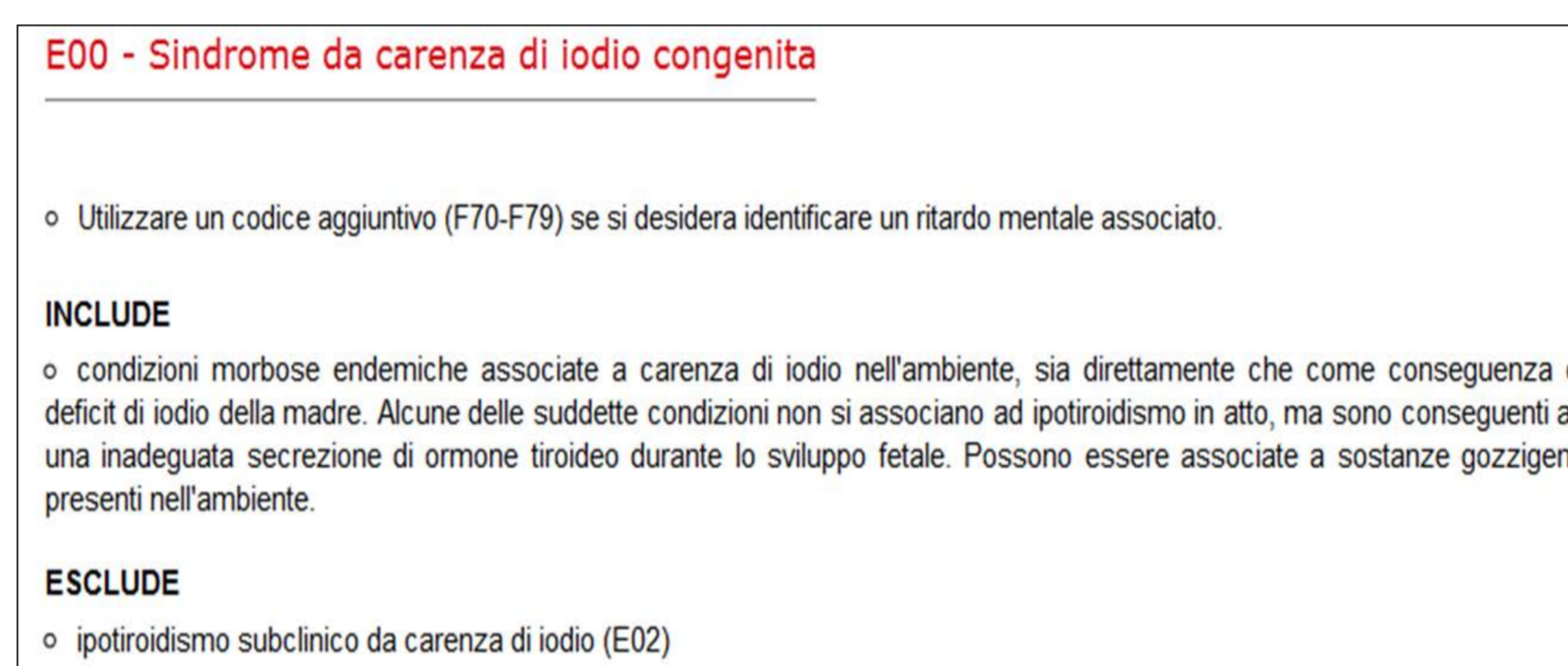
Figure 1: Browsing the ICD10 in the Istat System of Classifications

Results

The analytical classification is displayed as shown in figure 1, allowing the consultation of all the needed information. This tools, together with the additional information box (Figure 2), allows the user to have the complete information about the codes.

Figure 2: Additional information box contains all the information about the selected code. The user is redirected to the appropriate code by clicking on ICD10 codes mentioned in the "exclude" or somewhere else in the text

The search tool on the index is based on approximately 53 thousands terms. The power of the search is increased by the use of a system of synonyms (*see* and *see also* of ICD Vol III), and string standardization procedure. In order to better direct the user in the visualization of the many terms generated by the search, these are organized in the same way of the Volume III of the ICD10 (index) showing the results grouped by lead terms and indent. This view results to be very suitable for coding purposes (figure 3 and 4).

Figure 3: Results of the search of the term "infarto" (infarction). The 230 terms containing this string are displayed grouped as in ICD10 volume III, allowing the user to follow the correct lead term and indents
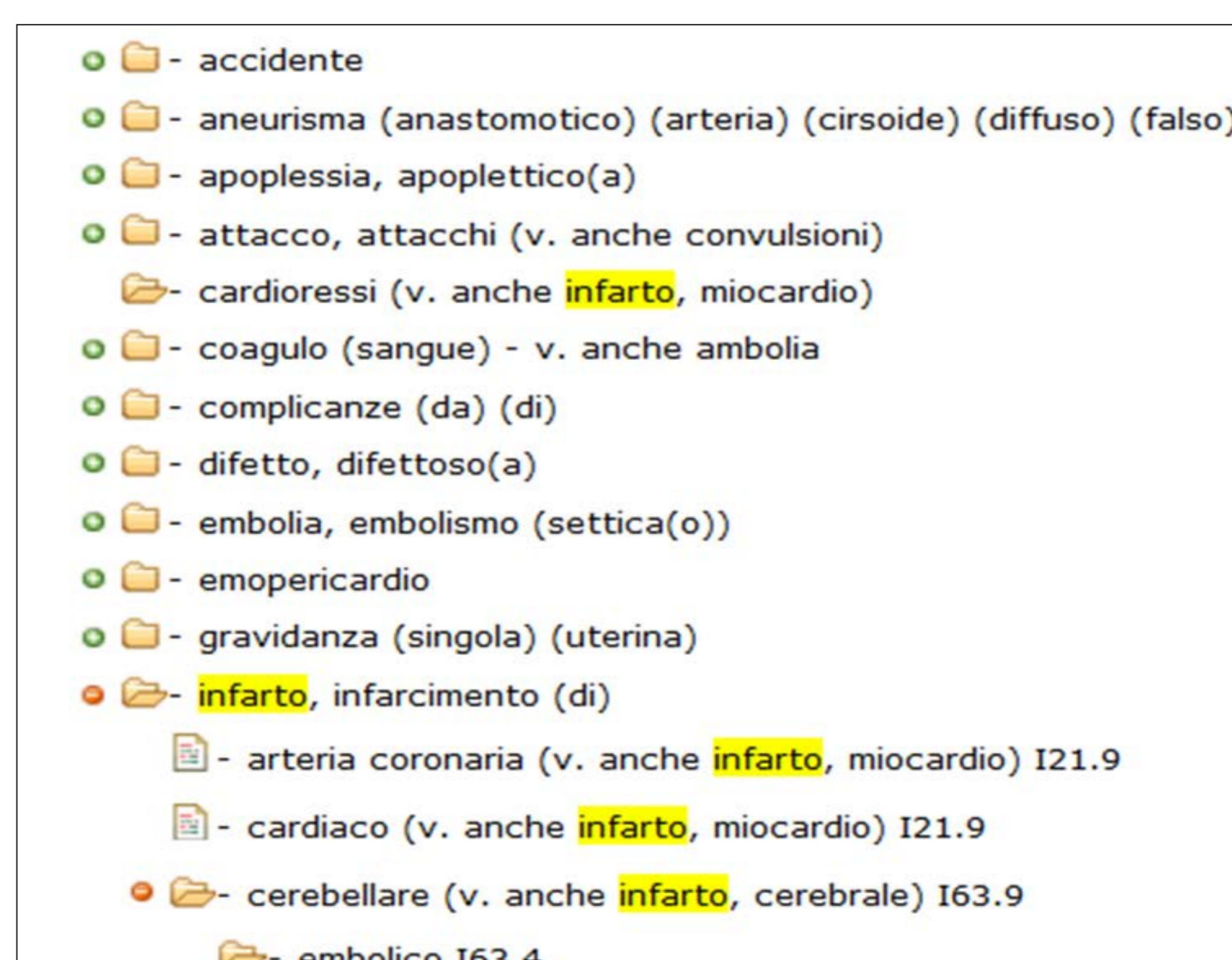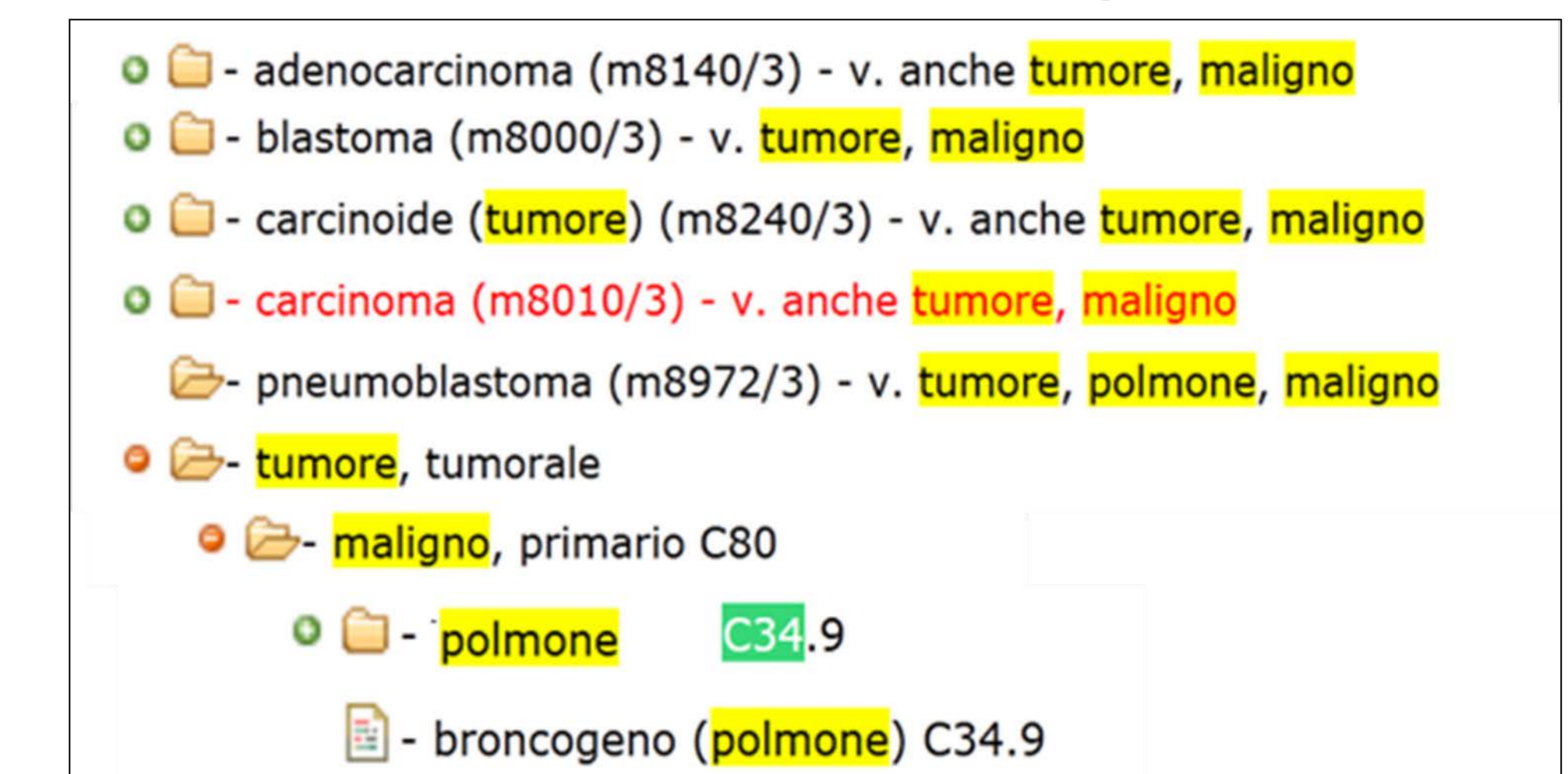

Figure 4: Part of results of the search "cancro del polmone" (lung cancer). The system automatically follows the "*see also*" reported in the the ICD volume III (Cancer, *see also* Neoplasm, malignant)

Conclusions

The ICD10 Online in Italian represents an essential tool for documenting statistics based on this Classification. The possibility of keeping updated the ICD together with the powerful integrated search tool, allows the use for coding purposes. Finally, the availability of the Online Classification is an opportunity for implementing the ICD10 in new fields.

Acknowledgements

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