Teaching English Medical Terminology Using the UMLS Metathesaurus and World Wide Web

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Background. The *lingua franca* of medicine, and most scientific fields, is English. The world's most widely cited medical journals are published in English. As such, clinicians and researchers whose native language is not English must learn it to avail themselves to the large body of medical knowledge published in English. The goal of this project is to use a combination of content (a non-English translation of MeSH and the UMLS Metathesaurus) and a platform (the World Wide Web) to develop a widely-accessible approach to teaching English medical terminology.

System. The initial version of this program uses the Chinese language, but could be readily adapted to virtually any non-English language for which the resources exist. The Chinese translation of MeSH was obtained from the Institute of Medical Information (Chinese Academy of Medical Sciences, Beijing, China). The content was loaded into an Oracle (Oracle Corp. Redwood Shores, CA) database that could be accessed by Common Gateway Interface (CGI) scripts from a Web browser. Chinese characters are entered using RichWin (Stone Rich Sight Information, Beijing, China), a commercial software package for entering Chinese characters.

The system first prompts the user for input of Chinese characters. To find terms, the system uses Oracle's text-searching function, and a list of all Chinese MeSH terms and their English translations that contain the Chinese characters (see Figure for input of Chinese characters for *blood pressure*) is displayed. The user selects an English term, which leads to the a page that lists the English term and its Chinese translation as well as (in English) information from the Metathesuaurus, including the MeSH tree address(es), synonyms from all vocabularies, parent term(s), child term(s), definition, CliniWeb [1] links (if they exist for the term), and a PubMed MEDLINE search for review articles.

Future Plans. This approach to teaching English medical terminology is generic and could be adopted to other languages. The Metathesaurus already contains MeSH translations from Spanish, Portuguese, French, German, and Russian, and MeSH itself has been translated into more than a dozen other languages. For languages that are in the Metathesaurus, we have developed a term look-up capability based on SAPHIRE [2]. Once the MeSH term is identified from any language, the term information in the Metathesaurus can be accessed and displayed. Future work will focus on implementing other languages and evaluating the system to determine how to best use it for pedagogic purposes.

The URL for this system is:
http://medir.ohsu.edu/chinese/

References

1. Hersh WR, Brown KE, Donohoe LC, Campbell EM, Horacek AE, CliniWeb: Managing clinical information on the World Wide Web, *J Am Med Inf Assoc*, 1996, 3: 273-280.
2. Hersh WR, Donohoe LC, SAPHIRE International: A tool for cross-language information retrieval, *Proc 1998 AMIA Annual Fall Symposium*, 1998, 673-677.

Figure – Selecting a Chinese MeSH term.