

Integrating a Document Engineering Environment in the French Guidelines Development Process

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Background

Clinical Guidelines (CG) are sometimes criticized for their structure and the quality of their content, and this has led to difficulties in their computerization. In this context, we propose a Document Engineering Environment (G-DEE), which analyzes guidelines to automatically identify recommendations using Natural Language Processing techniques in order to present users with a fast visualization of structure and contents.

Purpose

We present experiments carried out at the French National Authority for Health (the French organization in charge of CG production) to assist the CG development process.

Methods

We analyzed CG with G-DEE, and discussed the results with their project manager (PM). We focused on discrepancies between G-DEE and the PM in the identification of recommendations. Each recommendation for which there is disagreement is discussed and depending on this analysis, corresponding sections of the CG are reformulated, modified or validated by the PM.

Results

We checked with the PM that recommendations marked-up are concordant to those identified by experts totalling over 100 pages of CG text. We observed, for example, that false negative sentences, i.e. sentences that were not marked-up by G-DEE but identified as recommendations by PM, tend to occur as supporting sentences for recommendations preceding them in the text. We also found that false positive sentences are often misplaced within the document in terms of sections.

Discussion

Visualizing CG structure around recommendations proves to be useful for their analysis. It has been successfully used to rewrite problematic expressions, in order to reduce the risk of ambiguity. G-DEE may also be used to facilitate the CG synthesis authoring, generation of decision algorithms, and the elaboration of a list of evaluation criteria. We are currently developing metrics based on the occurrence of recommendations within CG and their ratio to background text.