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## Medical information retrieval: Semantic approach for answering PICO clinical questions

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Answering clinical questions give rise to numerous challenges among which term ambiguity and relevance estimation based on the distribution of the query facets in the documents. We address the issue of answering PICO (Patient/Problem, Intervention, Comparison, Outcome) clinical queries. Our contributions of this area include: A new document ranking model based on a prioritized aggregation operator that computes the global relevance score based on the relevance estimation of the semantic facet sub-queries and; leverages the importance of the facets according to the document and query under evaluation. Using this semantic representation, we proposed the use of a prioritized document relevance scoring operator that jointly uses the graded importance of the facet in an EBM task and the topical relevance of the document. The effectiveness of the proposed search approach is empirically evaluated using a clinical retrieval collection including 423 queries and more than 1.2 million of medical abstracts from PubMed. The experimental results show that our approach for PICO query answering significantly overpasses state-of-the-art document ranking models.

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