

A CLINICAL PRACTICE GUIDED DECISION SUPPORT SYSTEM BASED ON MEDICAL ONTOLOGY

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ABSTRACT. *In order to provide timely medical decision supports to clinicians, it is required that the medical knowledge should be represented in a computerized format and integrated with hospital information systems. Two approaches have been suggested in that respect. The first one is representing guidelines in a structured document format like XML, and the other is creating a clinical execution process of a specific disease. In this paper, we propose a novel hybrid method for generating a personalized clinical process for a patient based on clinical knowledge by applying CPG (clinical practice guideline). An information system architecture supporting patient centered and context aware clinical decision making is presented in this paper. Also, we suggest a mechanism in which the decision support module analyzes the medical status of a patient and creates a personalized clinical process using the medical knowledge.*

Keywords: Personalized clinical process, Clinical decision support system, CPG

1. Introduction. Evidence-based healthcare supports clinical decision making using documented guidelines during the process of providing medical services [1,2]. In evidence-based healthcare, CPG (clinical practice guideline) corresponds to the word "evidence". Clinical practice guidelines are systematically developed statements to support clinicians for providing proper treatments to patients in an appropriate manner in specific circumstances [3] and should be referenced in many procedures that patients will experience in hospitals. Physicians order treatments and prescriptions, and utilize hospital resources efficiently under quality management policy based on a verified set of clinical practice guidelines.

In order to develop a decision support system that supports such type of work, medical knowledge needs to be modeled in a computerized format. Two approaches have been made in that respect. The first one is expressing the clinical practice guidelines in a structured document format, such as XML documents, so that computers can work with them [4]. Those researchers have mainly concentrated on documenting the clinical practice guidelines electronically so that they could be efficiently used by computer systems. However, they did not deal with how the documented guidelines can be integrated with