Clinical Decision Support Systems to Prevent and Treat Pressure Ulcers and Under-nutrition in Nursing Homes

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Abstract. Clinical decision support systems (CDSSs) are believed to have the potential to improve care and change the behavior of health personnel. The project has focused on developing a CDSS to support prevention of pressure ulcer and undernutrition that is completely integrated in the electronic health record in nursing homes. Nursing staff have been involved in all phases in the development of the CDSS, which at present is ready to be implemented and systematically evaluated.

Keywords: decision support systems, design implications

Introduction

Screening for patients at risk using clinical guidelines is a powerful method in prevention and early detection of health problems in patients. Increased demands for evidence-based practice, cost control and improvement of patient care outcomes has led to the development of large amounts of clinical guidelines that are often incorporated into clinical decision support systems (CDSSs) used in health care services. CDSSs have been shown to improve the quality of care, but are still rarely in use. CDSS’s should be based on an understanding of health personnel’s workflow and their thinking strategies.

Aim

The aim of the current project was to design and pilot test a CDSS for health personnel to prevent and treat pressure ulcers and undernutrition in elderly patients in nursing homes.

Methods

The design of the CDSS presented here was based upon a process of working together with a group of nursing staff from various nursing homes, combined with systematic studies of the literature. Nursing staff were consulted in groups, interviewed and involved throughout all phases of the development of the CDSS. In addition, two systematic studies of literature that especially focus on systematic reviews of the development of recommended evidence-based interventions were undertaken. Functions were added to the CDSS for flexibility, display of documents and reminders.
The project also included pilot testing by a group of nurses where they reported their immediate experience of the CDSS as a basis for further development of its functionality.

**Results**

Through the electronic health record (EHR) “Prosys”, health personnel: (1) are able to screen patients using the two clinical guidelines, and (2) they can select recommended interventions from a list of evidence-based interventions, but also include other interventions for the individual patient.

**Conclusion**

Interactive development and testing of CDSS’s in collaboration with clinicians leads to a fuller understanding of the functionality of the system and its impact on the care process. The end result was a CDSS integrated in the EHR, designed in collaboration with nurses, with the purpose to improve clinical practice and patient outcomes in nursing homes.

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