Task analysis of information technology-mediated medication management in outpatient care.


Abstract

AIMS:
Educating physicians in the procedural as well as cognitive skills of information technology (IT)-mediated medication management could be one of the missing links for the improvement of patient safety. We aimed to compose a framework of tasks that need to be addressed to optimize medication management in outpatient care.

METHODS:
Formal task analysis: decomposition of a complex task into a set of subtasks. First, we obtained a general description of the medication management process from exploratory interviews. Secondly, we interviewed experts in-depth to further define tasks and subtasks.

SETTING:
Outpatient care in different fields of medicine in six teaching and academic medical centres in the Netherlands and the United States.

PARTICIPANTS:
20 experts. Tasks were divided up into procedural, cognitive and macrocognitive tasks and categorized into the three components of dynamic decision making.

RESULTS:
The medication management process consists of three components: (i) reviewing the medication situation; (ii) composing a treatment plan; and (iii) accomplishing and communicating a treatment and surveillance plan. Subtasks include multiple cognitive tasks such as composing a list of current medications and evaluating the reliability of sources, and procedural tasks such as documenting current medication. The identified macrocognitive tasks were: planning, integration of IT in workflow, managing uncertainties and responsibilities, and problem detection.

CONCLUSIONS:
All identified procedural, cognitive and macrocognitive skills should be included when designing education for IT-mediated medication management. The resulting framework supports the design of educational interventions to improve IT-mediated medication management in outpatient care.

KEYWORDS:
IT; education; human factors; medication management; task analysis