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Ten Factors to Consider when Developing Usability Scenarios and Tasks for

Health Information Technology

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Abstract

The quality of usability testing is highly dependent upon the associated usability scenarios. To promote usability testing as part of electronic health record (EHR) certification, the Office of the National Coordinator (ONC) for Health Information Technology requires that vendors test specific capabilities of EHRs with clinical end-users and report their usability testing process - including the test scenarios used - along with the results. The ONC outlines basic expectations for usability testing, but there is little guidance in usability texts or scientific literature on how to develop usability scenarios for healthcare applications. The objective of this article is to outline key factors to consider when developing usability scenarios and tasks to evaluate computer-interface based health information technologies. To achieve this goal, we draw upon a decade of our experience conducting usability tests with a variety of healthcare applications and a wide range of end-users, to include healthcare professionals as well as patients. We discuss 10 key factors that influence scenario development: objectives of usability testing; roles of end-user(s); target performance goals; evaluation time constraints; clinical focus; fidelity; scenario-related bias and confounders; minimize risks to end-users; embedded probes; and healthcare related outcome measures. For each factor, we present an illustrative example. This article is intended to aid usability researchers and practitioners in their efforts to advance health information technologies. The article provides broad guidance on usability scenario development and can be applied to a wide range of clinical information systems and applications.

Keywords: usability; human factors; health information technology; human-computer interaction; scenarios; tasks

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