

Integrating simulation with electronic health records: a design process.

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Abstract

Poster Topic: VP

Background:

Electronic health records (EHRs) are becoming ubiquitous in healthcare practice. However, their use in medical education has been slower to catch on. Computer-based, virtual patient, simulations that include EHR use are beginning to emerge. However most of them treat the EHR as a passive source of information and not as an active component of the simulation for the trainee to engage with. Recently, a new category of educational EHRs (eduEHRs) that allow learners to explore and experiment with EHRs in the context of medical education, is beginning to emerge. However, current eduEHRs often lack dynamic interaction built-in that would mimic real-world use of these tools. The integration of eduEHRs with virtual patient simulations has considerable potential to overcome these limitations of both.

Objective: to develop a new design process for integrating EHRs and virtual patient simulations.

Description of the innovation:

We applied a combination of storyboarding and information systems modeling techniques to represent a case from the AFMC-Infoway Virtual Patient Challenge. We first recreated the storyboard, which allowed us to identify the main entities involved in the scenario. We then represented the interactions among these entities using sequence diagrams—a modeling technique from Information Systems— which enabled us to identify the main types of interaction with the EHR and the points in the scenario where integration of simulation and EHR use shall occur.

Impact:

The proposed design process has the potential to make virtual patient simulations that involve EHR use more realistic in that the EHR becomes interactive rather than just passive source of information. Furthermore, it can help transform existing EHR systems into platforms for teaching and learning, i.e. eduEHRs. Additional features such as video tutorials for technical aspects of EHR use may also be inserted at points of integration identified by this process. However, until fully implemented and tested in educational settings, the full impact of the

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proposed design process remains unknown.