Selecting Clinical Computing Hardware Devices for Hospital Wards: The Role of IT Vendors

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Abstract and Objective

There is limited evidence available to inform decision making processes for selecting clinical computing hardware devices for implementation on hospital wards. We undertook a study to determine the role of IT vendors in this decision making process and to ascertain the factors that vendors deem important to consider in the selection of computing devices. Interviews were conducted with twelve vendors who provide hardware and/or software products to hospitals. Interviews were recorded and the transcripts were analyzed by coding of key concepts. The results highlight the need to assess information about a number of technology, workflow and environmental factors. The study provides a basis for developing a framework to assist decision makers in identifying the ideal devices to adequately support clinical work practices.

Keywords:

Computers, Computer systems, Decision making, Hospitals

Introduction

Frameworks to guide decisions in selecting computing hardware devices are largely absent from the literature. This fundamental gap in evidence may pose significant challenges for decision makers and implementers of computing devices. As part of a larger study, examining the perspectives of various groups involved in hardware selection decision making processes, this study takes the first step in contributing to such a framework by examining IT vendor perspectives.

Methods

Semi-structured interviews were conducted with twelve vendors, from eleven IT companies, in August 2009, during a national informatics conference where vendors, who provide technologies to the Australian and (in most cases) international health sectors, showcased their products. All vendors who were approached agreed to participate in the study. Interviews were transcribed and analysed independently by two researchers (MP and JC). The study was approved by the University of Sydney Ethics Committee and the conference coordinator.

Results

Vendors described their role in decision making processes as a consulting or advisory role. When selecting computing devices for hospital wards vendors perceived it important to consider a number of technology, workflow, and environmental factors.

Technology factors included: infrastructure capabilities; existing devices; device characteristics (e.g. robustness, battery life, wireless capabilities etc.); and software applications (e.g. transferability of the application onto smaller screen sizes).

In evaluating workflow, factors influencing device selection included: the user's role; type of tasks users undertake; level of information users need to access/capture; location where users need to access/capture information; and user preferences.

The environmental factors included: the type of ward; space/ward configuration; levels of concurrency (i.e. the number of users who will be operating the available devices at concurrent times); and clinician buy-in.

Conclusion

The complexity of decision making processes in selecting computing devices necessitates the need for a framework to inform such decisions. By examining the technology, workflow and environmental attributes of a ward, decision makers can more clearly identify devices to adequately support clinical work practices. These factors are important to ensure that the right device is available to the right person, to support the task they are conducting, in the location that it is needed [1].

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References

[1] Andersen P, Lindgaard A-M, Prgomet M, Creswick N, Westbrook J. Mobile and fixed computer use by doctors and nurses on hospital wards: multi-method study on the relationships between clinician role, clinical task, and device choice. J Med Internet Res 2009;11(3):e32.