Effectiveness of Near-field Communication Integrated with Mobile Electronic Medical Record System in Terms of Physician Turn-around Time in an Emergency Department: Simulation Study

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Introduction

Improving workflow in an emergency department (ED) is important. NFC-integrated mobile EMR could be helpful to the workflow in the ER but is rarely measured. The aim of this study is to determine the effectiveness of NFC-integrated with a mobile EMR system in terms of physician turn-around time in an emergency department (ED).

Material & Method

A simulation study was performed. A total of 25 participants working in the ED participated in two scenarios, using mobile devices or a PC: one involved locating randomly designated patients in the ED from its entrance, and the other entailed looking up the laboratory results of an ED patient at the bedside. Upon completion of the scenarios, the participants responded to a 10-question questionnaire using a system usability scale (SUS).

Result

Locating patients from the ED entrance took 93.0 s using the PC scenario, whereas it took 57.3 s using the mobile scenario, which is significantly faster (P < .001). Searching for laboratory results of the patients at the bedside took 25.2 s using the mobile scenario, and 61.5 s using the PC scenario, which is statistically significant (P < .001). The mean SUS score of NFC−mobile EMR was 71.9 points.

Conclusion

NFC integrated with mobile EMR helped physician practice to be more efficient, with good usability.

Key Word : NFC, mobile EMR

(a) Scenario A : "Locate the patient A"   (b) Scenario B: "Look for the patient's laboratory results"