

# Leveraging Electronic Health Records to Support Innovative Research

Kate E. Hoffman, BSN, RN, Deborah F. Mulloy, PhD, RN, Susan M. Lee, PhD, RN

*Brigham and Women's Hospital, Boston, MA*

**Keywords:** Clinical Documentation, Electronic Medical Record, Patient Safety and Quality

## Introduction/Background

Prior to electronic health records (EHR), the conduct of research involved the painstaking creation of databases and data collection instruments. The conduct of research has been revolutionized by the use of EHR, which enhance the overall efficiency of the research process (Rusanov, A., Weiskopf, N., Wang, S., & Weng, C., 2014). We recently conducted a randomized control trial testing a new needle free blood draw device. The purpose of this abstract is to describe how an EHR supported the conduct of this research, allowing the study coordinator to manage the study using data from the EHR.

## Methods

We used an EHR in a prospective, randomized controlled trial involving 160 surgical patients in order to test a new needleless blood draw device postoperatively. In order to screen for potential subjects for this study, the study coordinator utilized the hospital's EHR to run reports of preoperative evaluation appointments and operating room schedules. The study coordinator then created a spreadsheet, listing the patients identified through the EHR as meeting the study requirements. After consenting and being enrolled, patients were flagged in the EHR as research subjects. Progress notes were added to their EHR identifying them as members of the study. The study coordinator placed the orders for the blood work in the patient's EHR and when the blood draws were performed, the lab results populated in the patient's EHR. The study coordinator also used the patient's EHR to record the dwell time of peripheral intravenous catheters. Finally, the EHR was utilized to review study related charges.

## Results

Many features of the EHR were used in the conduct of this research. Data from the EHR helped the study coordinator screen, enroll, and flag potential subjects, monitor operating room schedules and changes, track subjects' location within the hospital, order and view lab results, communicate with the subjects' clinical teams, document and retain data to fulfill the IRB and other federal regulatory requirements, perform retrospective analyses, and review study charges.

## Discussion/Conclusion

As healthcare evolves, nurses will continue to evaluate new technologies that may improve patient care. Nurse researchers studying these new technologies should recognize that EHRs have the potential to greatly improve research study workflows, but should also be cognizant of potential limitations. One limitation experienced during this study was the inability to hide lab results intended strictly for research purposes from the clinical team. Another potential limitation to generalizability is that the research features we used had been built into the application for research support. These research functions were included in the EHR, and therefore, were readily available after training on the use of these features was complete. The utilization of EHR in research offers the opportunity to speed the rate of nursing and healthcare discoveries, ultimately improving nursing practice and producing better patient outcomes (Friedman, C., Wong, A., & Blumenthal, D., 2010). Given the prevalence of EHRs in today's healthcare world, further research and the establishment of set guidelines for using EHRs for research purposes would be beneficial to all researchers in healthcare.

## References

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