

# Apps at the Bedside to Decrease Heparin Errors

Nicole Delinski MSN, RN, CCRN, DNP(c)  
OSF Healthcare Peoria, Illinois

## Introduction

OSF Saint Francis Medical Center is a 600-bed, Midwest tertiary hospital.

Our hospital was experiencing a rapid rise in reported Heparin infusion related medication errors. Within three months our facility experienced over 18 critical occurrences and this was deemed a critical issue.

Quality assurance, performance improvement, pharmacy and education representatives were quickly called to action to identify not only the root cause of the errors but also an effective solution.

The root cause analysis revealed three identified issues;

- not performing an independent double check
- not following the sliding scale protocol
- not using critical thinking when scheduling labs related to Heparin dosing.

It was determined that individual nurse performance would need to be tracked. Awareness and education was needed for over 800 employees, immediately.

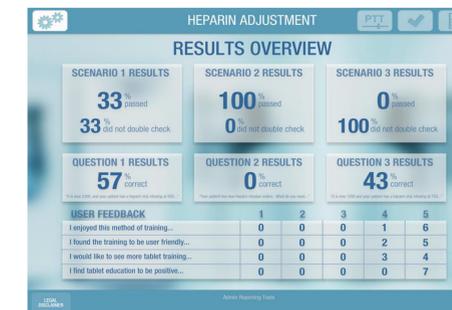
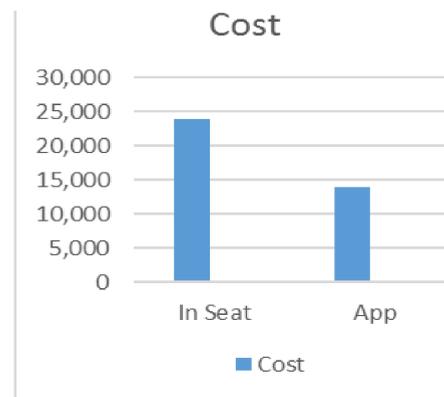
## Methods and Materials

After much deliberation, the team decided on two possible solutions:

- Put all nurses through a one-hour in-seat heparin education.
- Develop a mobile education app that will track all nursing data.

Time, cost and effectiveness were considered with the decision to create a mobile app. Our facility partnered with a local software development company to build our own Heparin app.

The Heparin app was distributed via mobile tablets through the facility. The facility used preexisting tablets to decrease cost and nurses were not asked to download the app on their personal devices. The Heparin app took less than three minutes to complete and was an interactive experience for the nurse. The Heparin app optimized the nurses critical thinking skills by incorporating actual tactile programming of an infusion pump as well as incorporating critical thinking multiple choice questions. The sliding scale protocol was programmed into the app as well as independent double-check functionality. Nurses were not asked to leave the floor to complete the app; instead the app was completed in real-time while the nurse was practicing.



## Results

The app was distributed to over 800 nurses in just six weeks.

Our facility experienced an immediate decline in Heparin infusion related medication errors. In three months our Heparin infusion related medication errors went from the previously report 18 errors down to five errors of lesser severity.

The avoidance of 13 Heparin infusion related medication errors saved the hospital over \$65,000 in just 3 months.

The Heparin app tracked user performance and was able to identify that six of the 800 nurses that completed the Heparin app actually needed remediation.

The data also showed that the most common error that nurses performed on the app was the absence of the independent double check.

The app is continually being used as a reference tool and remediation tool for nurses at the bedside.

## Contact

Nicole Delinski  
OSF Healthcare  
Email: Nicole.Delinski@simnext.com  
Phone: 309-657-7787