

Implementation and Evaluation of a Smartphone Application for the Perioperative Care of Patients Undergoing Routine Neurosurgical Procedures at an Academic Medical Center

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Introduction

The delivery of adequate instructions both before and after a procedure or surgery is of paramount importance in ensuring the best possible outcome for patients. Studies have shown that most of the information provided by physicians regarding surgery is forgotten and many instructions not complied with.

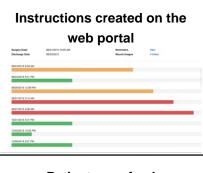
Methods

Patients were accrued prospectively to evaluate a new smartphone app designed to provide tailored pre- and post-operative instructions (TrackMyRecovery®).

Faculty and their staff registered online and created tailored pre and post-operative instructions for individual surgeries. Patients with smartphones or tablets undergoing routine neurosurgery (brain and spine) procedures were instructed to use the app (TrackMyRecovery®) with instructions. Patients' compliance with instructions is tracked from the app to the web portal. The app also allows patients to send pain scores and wound images in the postoperative period.

The primary end points were 1. Successful registration and app use 2. Compliance with pre and postop instructions 3. Sending pain scores and/or wound images measured by the web portal activity window.

The secondary endpoints were 1. Canceled surgeries 2. Complications 3.Readmissions 4. Office phone calls



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Self-reported pain scores after

surgery				
Surgery Date: Discharge Date	09/21/2015 10:30 AM 09/23/2015	Reminders Wound Images	View 4 (View)	
09/24/2015 5:33 AM				
08/24/2015 5:H1 PM				
08/26/2015 12:38 PM				
05/27/2015 3:15 AM				_
09/27/2015 3:56 AM				_
10/01/2015 4:01 PM				
10/03/2015 10:05 PM				
10/06/2015 5:31 PM				

App screenshot: Home page



Results

30 patients were accrued. All successfully registered, downloaded and used the app. All patients read and complied with instructions. There were no cancelled surgeries, postoperative complications or readmissions. 5 of 30 (17%) patients called the office after downloading the app for additional questions regarding peri-operative care.

Conclusions

A smartphone app developed for perioperative care was used effectively in a small cohort of 30 patients undergoing routine neurosurgery procedures ensuring 100 % compliance with instructions. The use of electronic instructions on a smartphone or tablet with built-in reminders and the ability to send secure data to physicians such as wound images and pain scores could improve perioperative care, ensure compliance, prevent last-minute cancelations and reduce postoperative complications.



Patient concerned about wound infection

Self-reported wound image



Wound resolution without office visit

Learning Objectives

The use of a mobile based application aided in neurosurgical patient perioperative care

