How Mobile Apps Can Reduce Preventable Readmissions

Three cost-effective apps you can launch in weeks

MobileSmith
Your Quickest Path from Idea to App

- Efficient mobile strategies for reducing hospital readmissions.
- **Three easy use cases** your hospital can launch within weeks.
- Six best practices for cost-effective patient- and physician-facing apps.

Introduction

This year, readmission penalties will hit **2,610** hospitals across the US, with the maximum 3 percent penalty applying to 39 organizations – up from 2 percent maximum applied to 18 hospitals in 2013.[1]

Scrambling to reduce readmissions, up to 75 percent of which (among Medicare patients) are estimated to be preventable[2], many providers are turning to **mobile technology.**

Mobile is capturing the healthcare scene – and with good reason! In 2014, 174 million people in the U.S. owned smartphones, a 72 percent penetration of the mobile market.[3] Tablet usage was also growing among all age groups – more than half of US online consumers now own tablets.[4]

In 2014, usage of healthcare apps increased by 89 percent.

More than 33 percent of physicians have recommended mobile health applications to their patients.

More importantly, the past few years have seen a remarkable surge in **mobile health apps**. In 2014, usage of healthcare apps increased by 89 percent.[5] According to Manhattan Research *Taking the Pulse* Survey, more than 33 percent of physicians have recommended mobile health application to their patients.[6] Many top hospitals are publishing their own branded mobile apps, with a strong correlation observed between the number of branded apps and the hospital's patient satisfaction ratings.[7]

So, can smartphone and tablet apps help reduce preventable readmissions?

Efficient Mobile Strategies for Reducing Readmissions

Let us explore some of the most efficient readmission reduction strategies where mobile apps can be leveraged successfully.

Proper Discharge Communication

Poor communication with patients and family members at discharge is one of the top reasons for readmissions, as it causes confusion about follow-up care and prescribed medications. In a recent survey of patients 65+ years of age, only 59.6 percent were able to accurately describe their diagnosis, and of those discharged with a scheduled follow-up, only 43.9 percent recalled the details of their appointment.[8]

Only 59.6% of discharged patients are able to accurately describe their diagnosis.

Only 43.9% of patients recalled the details of their appointment.

Improved discharge procedures – including education, communication with the patient and family, and support after discharge – result in lower readmission rates and generally improved patient outcomes. For example, in a 2011 study, patients who received telephone follow-up within 14 days of release from hospital were **23.1** percent less likely to be readmitted for that condition within 30 days.[9] However, such programs may have many impediments – for example, if a patient is treated at a rehabilitation facility or stays with a family member, you might not reach them at their landline number. Plus, delayed notification of hospital discharges from the health plan may hinder the successful and timely delivery of calls.

An app for: Post-Discharge

An intuitive, comprehensive post-discharge mobile application supplied to patients or family members at discharge can be instrumental in improving follow-up care and curbing preventable readmissions. Take **vSolutions by VERITAS** post-discharge app, for example. This app, built with the MobileSmith platform, offers a number of interactive functions that **promote self-reliance** and empower the patient to take charge of their health.

Protected by a secure patient login, this native smartphone app allows the patient or their family to:

- Connect to EHR to **push messages and data**, based on the user logging:
    - Appointments
    - Medications
    - Health indices;
- Pull up **educational articles** on medications and conditions;
- Store documents and notes;
- Quickly connect with their healthcare provider;
- **Earn rewards** based on their track record and adherence.
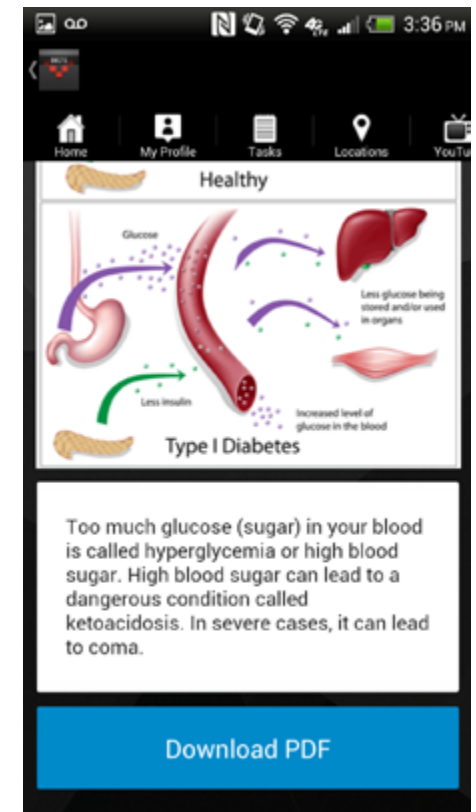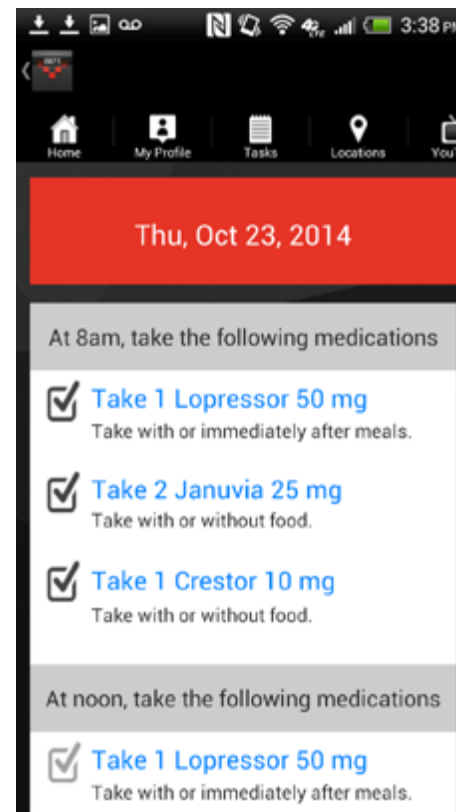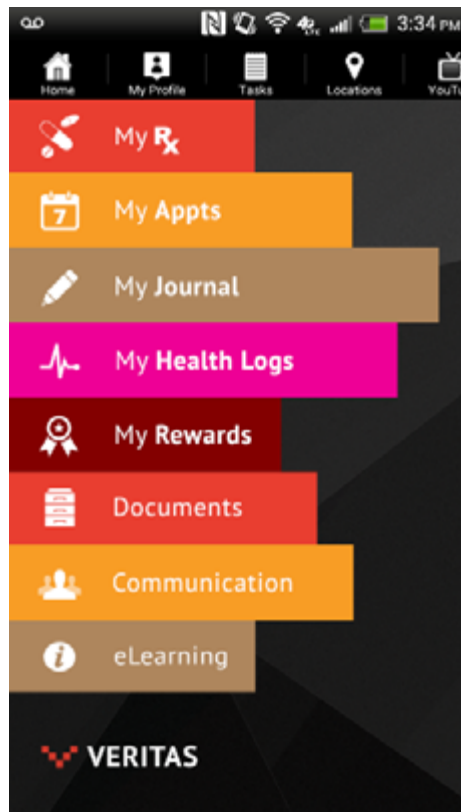
Improving Prescription Adherence

Medication non-adherence is responsible for a significant number of hospital readmissions, with up to **75** percent of US adults non-adherent in at least one way. [10] According to Mayo Clinic, only 37 percent are able to state the purpose of their medications.[11] Moreover, patients are increasingly discharged with unresolved medical issues requiring post-discharge workups, roughly two-thirds of which are never completed.[12]

75 percent of US adults are non-adherent in at least one way.

Only 37% are able to state the purpose of their medications.

A direct correlation between improved prescription adherence and reduced healthcare usage has been established by multiple studies.[13]   An easy-to-use smartphone or tablet app enabled with **prescription reminders** and **timed push messages** from the patient's most trusted healthcare source – their provider – can be an efficient branded tool for improving patient education and adherence.

An app for: Medication Adherence

Offering your patient a user-friendly mobile tool for medication tracking doesn't require implementing a complex technology. This simple **MyMeds** app, for example, built by **Robert Wood Johnson University Hospital**, offers plenty of useful functions:

- Enter and track your medication dosage and intervals.
- Get information about your medications and interactions.
- Set up and receive **medication reminders** in the app.
- Record your reaction to medications and track improvement.
- GPS-enabled pharmacy locator with turn-by-turn directions
- Get latest news from the hospital community.

This app has been built by RWJUH without programming. Also, check out MobileSmith's own **PillPal** – which can be customized quickly for any organization.
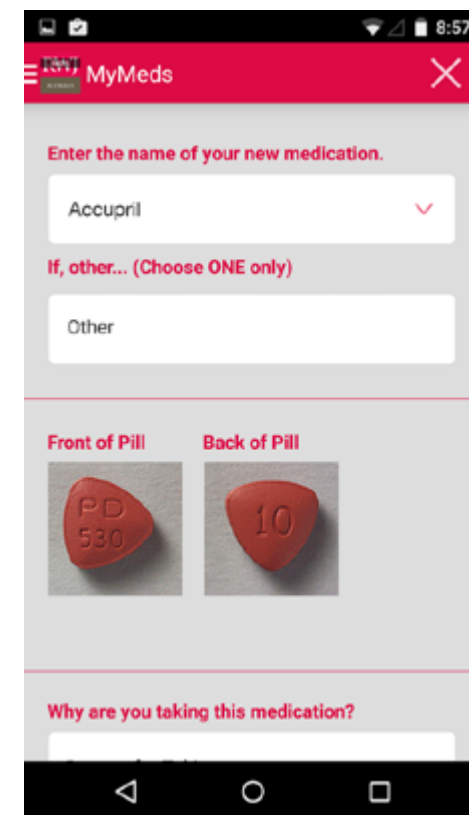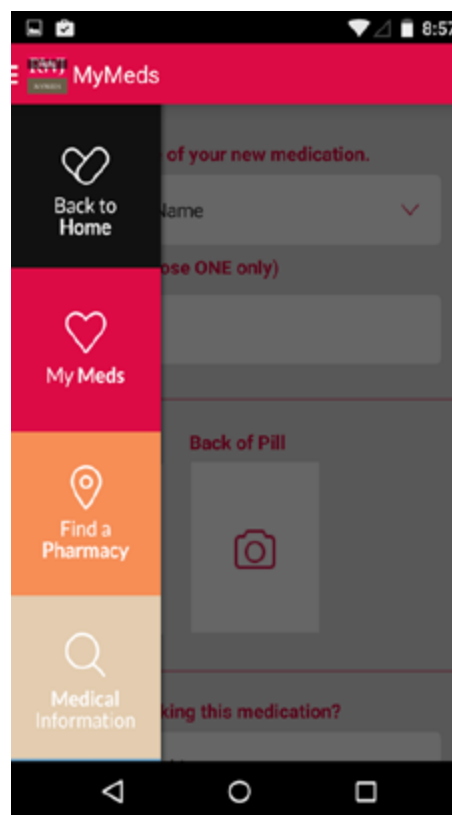
Post-Discharge Home Visits

According to a 2011 study by the Center for Studying Health System Change (HSC), up to one-third of adults discharged from a hospital do not see a physician within 30 days of discharge, which suggests substantial gaps in care coordination.[14] Many patients who do not see a physician after discharge are at high risk of readmission because of chronic conditions or activity limitations, according to the study.

> **Up to one-third of adults discharged from a hospital do not see a physician within 30 days of discharge.**

Multiple studies have also shown that programs providing a series of post-discharge home visits for at-risk patients can significantly reduce readmissions.[15] However, to be efficient, home visits have to be made within a few days of the patient discharge, and **managed in an agile, cost-effective way.**

An app for: Streamlining Home Visits

A home visit program can be costly and inefficient if it lacks proper tools. Its operation can be significantly improved with an interactive **Home Care app**, such as this app built with the MobileSmith platform. It can be customized for specific groups of home care specialists, allowing them to:

- **Log in daily** and get a list of patients to visit.
- Pull up patient data by:
  - Location – get GPS driving directions.
  - Demographics – retrieve and edit data.

- Check in on arrival, check-out when done.
- Identify and address **care gaps.**
- Enter and edit notes.
- All data is updated daily and personalized based on secure user login.

This app can be used by hospitals as well as specialized home care organizations, and can be easily rebranded for your organization.
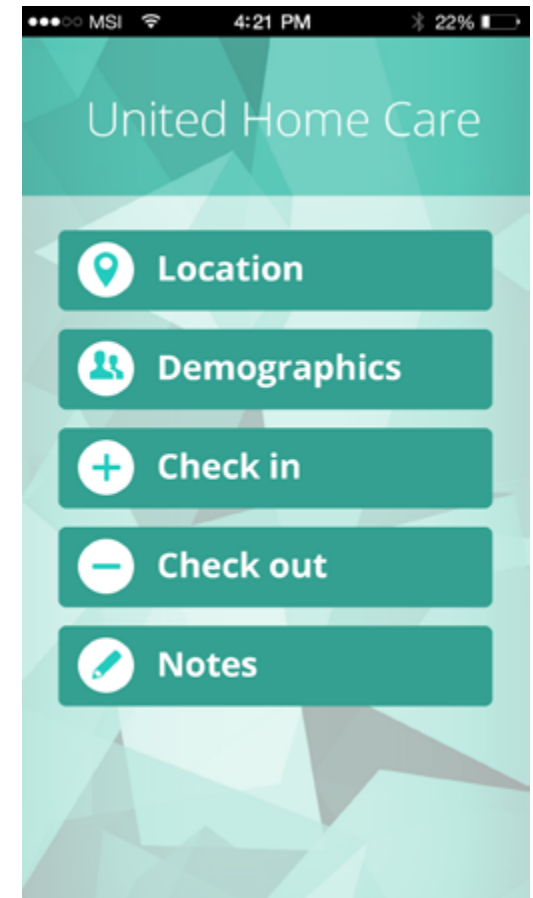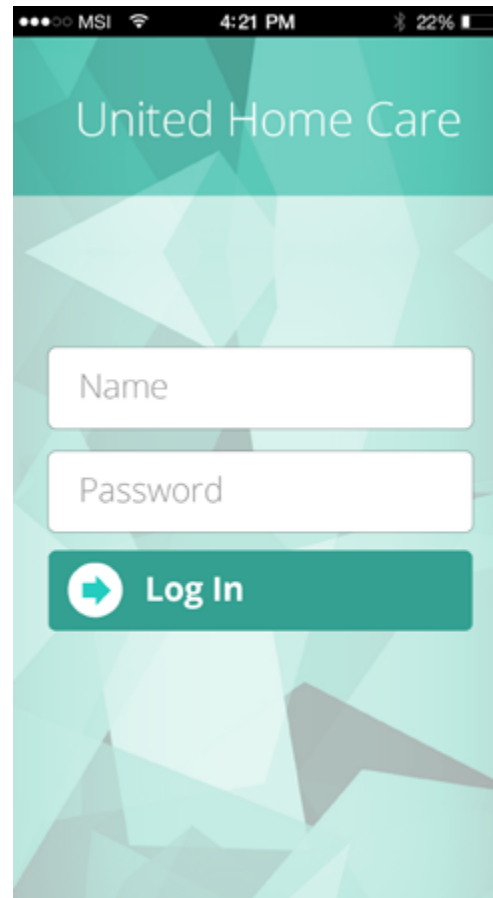
The Cure: Empowering the Patient

A link has long been established between the sense of personal control and positive health outcomes.[16] To address the readmissions problem, healthcare providers must empower the patient, and mobile applications can be efficiently leveraged to do that.

To address the readmissions problem, healthcare providers must empower the patient, and mobile apps can be efficiently leveraged to do that.

But what about remote monitoring? Many mobile startups and medical device companies offer apps connected to passive sensors and remote monitoring devices. Mayo Clinic's study of such devices, for cardiac rehabilitation patients, found that only 20 percent of those patients who participated in the smartphone study and recorded their blood pressure and weight on a daily basis, were readmitted within three months, compared to 60 percent of patients who did not participate in the program and landed back in the hospital.[17]
A whopping **40** percent decrease – which can easily translate into a considerable reduction in penalties!

No doubt, healthcare will increasingly rely on remote sensors. However, while efficient, such devices are being adopted rather slowly due to high costs of acquisition and setup, as well as difficulties with reimbursement.[18]

Besides, not all patients are ready to use a wearable device or a sensor – in fact, less than half of people who own a wearable utilize it daily.[19] Further, not every hospital has the capability to arrange the delivery of device-generated data into their EHR system. The volume of sensor-generated data can be overwhelming, and the integration difficult to implement.

Not all patients are ready to use a wearable device or a sensor.

Smartphones and tablets, however, are ubiquitous and can be leveraged right now.

Practically everyone, however, owns a smartphone. With all its innovation, **digital technology still has to rely on the patient** to accurately collect and report data. Hospitals can leverage the mobile app surge to empower their patients, by providing easy-to-use, branded smartphone apps, and encouraging patients to take a more proactive approach to their health.
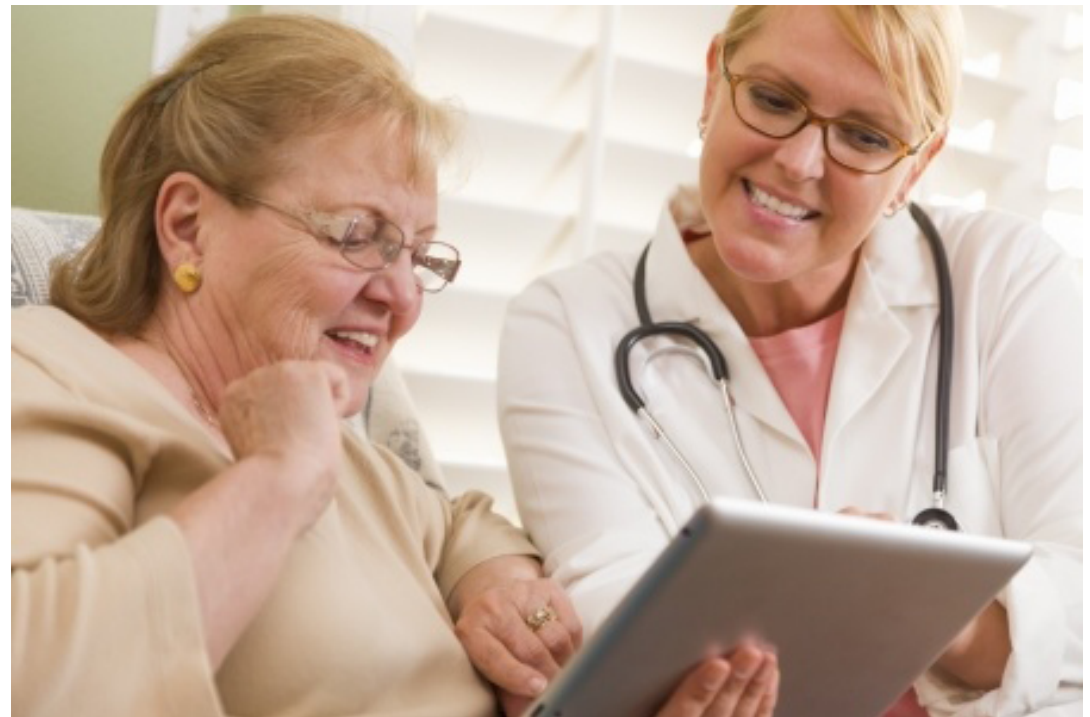
6 Best Practices for Cost-Effective Patient- and Physician-Facing Apps

As many hospitals have demonstrated, it is entirely possible – and more efficient – to build their own, branded apps, than to try and adopt any of the myriad of apps available in the market. To ensure your app is inexpensive to develop and optimized to meet your users' needs, follow these best practices:

1

Research Your Target Patient Group

Whether you are building a patient-facing or internal app, knowing your target audience is the key to success. What kind of functionality would they enthusiastically embrace in a native app? Think of the likely context where they would use it: a smartphone app can enable functions where connectivity is limited, whereas a website or a patient portal could be hard to reach.

2

Start Simple; Iterate Often

An app that does everything for everyone is not likely to be user-friendly. Start with a small, targeted use-case. MobileSmith allows you to prototype your app quickly and send your test app instantly to iOS or Android devices for testing – inside your team, or with a patient focus group. To make changes, simply return to the platform and modify your app until you are 100% satisfied with the user experience. No additional development costs involved.

3

Polish the User Interface and Experience

Your app needs to catch the user's eye to be downloaded and a superb user experience to keep being used. Nobody would come back to a poorly designed, disorganized app. Use the testing phase of development to get feedback on design as well as functionality, and don't be afraid to go back to the drawing board and try again.

4

Keep your App Fresh

Keeping your app content and functionality up-to-date is essential for successful patient engagement. Use the MobileSmith content management system to update content on-the-fly and to push messages in all of your apps, with role-based access established for your staff. Custom alerts, app version control, and real time content updates will make your app(s) a truly satisfying experience.

5

Establish a Secure Data Exchange

To guarantee security and patient privacy, MobileSmith uses reliable user authentication scenarios and direct XML data streaming between your backend systems and each mobile device. You can engage your patients with condition-specific content without having to worry about exposing sensitive patient data. Moreover, native apps can exchange data even in the absence of a reliable Internet connection.

6

Embrace Analytics

Once you distribute your final app, use app analytics to track usage and understand the positives and negatives. You can find out what devices are being most frequently used, what pages are most (and least) frequently visited, how much time the users are spending in your app., and what is turning them off. Regularly checking user reviews and issuing updates is another great strategy for keeping your app sharp. Knowledge is power!

To learn more about the MobileSmith platform and discuss your mobile ideas, contact us at **855.516.2413**, or **sign up** for a platform demo.

References

[1] **Medicare Fines 2,610 Hospitals in Third Round of Readmission Penalties,** Kaiser Health News, October 2, 2014.

[2] **Reducing Readmissions – Top Ways Information Technology Can Help,** HIMSS, 2012

[3] **comScore Reports September 2014 U.S. Smartphone Subscriber Market Share,** comScore, November 6, 2014

[4] **Consumer Outlook on Tablets,** Consumer Electronics Association (CEA) report, BusinessWire, August 20, 2014

[5] **Mobile Use Grows 76% Year-to-Year,** Flurry, January 6, 2015

[6] **Taking the Pulse,** Manhattan Research, quoted in **MobiHealthNews,** May 29, 2014

[7] **Can Branded Health Apps Improve Hospital Ratings?** MobileSmith, October 6, 2014

[8] Horwitz et al, **Quality of Discharge Practices and Patient Understanding at an Academic Medical Center** , JAMA Internal Medicine, October 14, 2013

[9] Harrison et al, **The Impact of Postdischarge Telephonic Follow-up on Hospital Readmissions,** Population Health Management, February 2011

[10] **Improving Prescription Medicine Adherence is Key to Improving Healthcare,** PhRMA, January 2011

[11] Mayo Clinic Proceedings, 2005

[12] Moore et al, **Tying Up Loose Ends: Discharging Patients with Unresolved Medical Issues,** JAMA Internal Medicine, June 25, 2007.

[13] E.g., Roebuck et al, **Medication Adherence Leads to Lower Health Care Use and Costs Despite Increased Drug Spending,** Health Affairs, January 2011

[14] Sommers, Cunningham, **Physician Visits After Hospital Discharge: Implications for Reducing Readmissions,** NIHCR Research Brief, December 2011

[15] E.g., **Frequent In-Person Home Visits can Reduce both Readmission and Death for Patients with Heart Failure.** Cecil B. Shep's Center, UNC, May 26, 2014

[16] E.g., C. Peterson, A. Stunkard, **Personal Control and Health Promotion,** Pergamon Press, 1989

[17] **Mayo Uses mHealth to Reduce Cardiac Readmissions by 40%,** by Jennifer Bresnick, EHR Intelligence, April 3, 2014

[18] **Though Novel, Reimbursements and Other Costs will Slow CardioMEMs Adoption**, MDDI, July 14, 2014

[19] **The Wearable Future,** PwC Consumer Intelligence Series, October 2014