Leveraging Mobile Apps to Reduce Emergency Room Overcrowding

Efficient mobile use cases that improve ER patient flow and patient satisfaction
The Problem

Emergency room overcrowding is a rising and costly problem for U.S. hospitals, affecting the quality of patient care and patient experience. Data shows that more patients getting insured through the Affordable Care Act has resulted in increased traffic to hospital Emergency Departments.¹ Wait times are on the rise nationwide, especially in smaller states with dense populations such as Connecticut, Delaware, and New Jersey.²,³ Long wait times aggravate patients and may cause some of them to leave without being seen or without receiving treatment.

As emergency room usage grows, managing throughput can be a real challenge. At the same time, it is estimated that anywhere from 8 to 62 percent of ER visits may be for non-urgent conditions.⁴ The Emergency Department fills the gaps in primary care for many patient groups, including frequent ED users with multiple diagnoses.⁵

Direct Impact: Patient Experience

Why is fixing ER overcrowding so important? Healthcare is becoming increasingly competitive, especially when it comes to well-insured, high-revenue patients. If patients have a negative experience with your emergency department – which in many cases is their first encounter with your healthcare brand – you run the risk of them quickly switching to a competing hospital, ambulatory center, or urgent care clinic. Long wait times have a tremendous impact on patients’ perception of quality and on your HCAHPS scores.

Crowding can also have an adverse impact on patient outcomes, too. According to a 2012 study published in the Annals of Emergency Medicine, patients at overcrowded emergency departments were 5 percent more likely to die as compared with patients in less-crowded ERs.⁶

Among multiple strategies to reduce ER crowding, some hospitals have been experimenting with mobile solutions. Here we review the evidence of the efficiency of these solutions in curbing the ER problem, and identify what made them successful. We also lay out some successful approaches to building a patient-facing Emergency Room app and identify the key mobile moments and functions it can leverage.
Successful Mobile Approaches to Reducing ER Overcrowding

Rapid smartphone adoption among all patient groups suggests that mobile solutions may be a quick path to alleviating ER crowding and increasing patient satisfaction. To date, there are some 259,000 mHealth apps in the app stores, the majority of them offering little value and downloaded few or zero times. In this mHealth “app jungle,” patients opt for popular third-party Emergency Care apps such as iTriage and WebMD to mine information about their symptoms and available care options.

Many hospitals are choosing to publish their ER wait times in their branded apps to provide better transparency for patients. Examples include Carolinas Health Care’s MyCarolinas, Methodist Health Care’s ER Wait Times, Ochsner Health System, and a number of others.

There is, however, little data suggesting that such apps reduce ER overcrowding. Hospitals advertising their ER wait times in mobile apps have reported increased traffic to their ER from the app. Thus, according to a case study published by Healthagen, HCA East Florida’s Wait Time campaign using iTriage app and other components drove emergency department increases by 7-15%. Tufts Medical Center offers the InQuicker mobile tool with an online scheduling option for its ED, but also reports slightly increased patient traffic due to the app. While providing better wait time transparency and convenience, these features do little to actually reduce ER misuse. To put it simply, ER wait times and online scheduling are useful mobile features embraced by patients, but your hospital has to already be user-friendly and efficient to make good use of them.

Another promising mobile approach consists of introducing Urgent Care wait times. This approach will work for the growing number of healthcare systems who have acquired or partnered with urgent care clinics. Multiple examples suggest that handy information on UC centers within proximity may prompt some patients to reconsider an ER visit, opting for convenient Urgent Care options instead.

For example, Tanner Health System in Georgia offers a native app for iOS and Android smartphones and provides dynamically populated wait times for its four Urgent Care centers. The health system reports lively adoption of the app, even among older patients, and the number of patients using walk-in clinics is increasing 20 percent each year.

“While patients can also see wait times on the mobile site, it is faster for patients to look up wait times in the app.”

- Kelly Meigs, Marketing Director, Tanner Health System
Key Components of the Problem

To identify opportunities for mobile, the ER overcrowding problem must be analyzed from the standpoint of various contributing factors. There will be potential mobile moments for some of these problems, but others are harder to tackle with apps. Below is the condensed list suggested by a quick review of the current literature:

- Emergency departments fill the primary care gap for psychiatric patients and other underserved patient populations.\(^\text{11}\)
- Non-emergency patients often present with symptoms of true emergencies.\(^\text{12}\)
- Standard triage procedure leaves lower-acuity patients waiting longer for care.
- Shortage of primary care doctors who accept Medicaid drives patients to the ER.
- There is no penalty or incentive for physicians or patients to move away from the ER.
- ERs operate around the clock, while primary care can be unavailable during off hours.
- Newly insured people are accustomed to using the ER, despite higher total costs, to avoid the copay at their primary care.
- Hospitals in areas like Florida experience a seasonal influx of patients, or “snow birds.”

Is There an App for That?

While some problems, such as the shortage of primary physicians, cannot be addressed with mobile, here are some areas that can:

1. Awareness of Alternatives

For well-insured patients who are not aware of available convenient care options within your hospital’s network, a mobile app can be an excellent informational tool. You can drive patient volume to your affiliated network of urgent or primary care clinics, while diverting a certain volume of patients from your Emergency Department. A list of options showing both ER and Urgent Care wait times, a map with quick GPS directions, or a convenient mobile check-in would both reduce your Emergency Department wait times and prevent your organization from losing revenue.
2. **Awareness of Symptoms:**
Nobody wants to sit in the waiting room for four hours with an ear infection or a bad toothache. Your branded app can offer a quick guide to orient patients with common symptoms and suggest the appropriate venues for treating them.

Many hospitals currently publish online guides to the most common conditions and symptoms treatable in a primary care setting vs. symptoms that warrant a trip to the Emergency Department. Example: an excellent symptom guide offered by The Carle Foundation. Turning an online guide like that into a wizard-like mobile triage tool would be a no-brainer, and an easy task to achieve.

You can distribute a branded **emergency symptom checker app** to existing and prospective patients using your website, email, local search, posters, or flyers, for example. This makes it easy to educate patients about their care options and self-assessment for initial triage. The same app can also promote local in-network primary care, timely immunization, seasonal healthy living tips, and more.

3. **Super-Utilizers**
While difficult to reach with other digital tools, your super-utilizers — the patients who drive the highest costs and may clog your Emergency Department for many days — may be active smartphone users. Consider giving them a simple mobile app showing local primary care facilities, **overnight stay options**, easy walking or driving directions, **tap-to-call transportation** to a clinic, introduction to a friendly care coordinator, or quick contact numbers they can tap to call. A good idea is to leverage the app to help patients **build a relationship** with their primary care physician or care coordinator.

For those frequent ER visitors who do not have access to a working phone, distributing an inexpensive smartphone with a preinstalled app may be a viable and less expensive option.
4. Overall Experience
Emergency Department experiences can be stressful for everyone – physicians, nurses, patients, and patients’ family members. Tensions may run high, especially when the triage of life-threatening conditions leaves non-emergent, but still miserable, patients waiting long hours in a crowded, uncomfortable space. Hospitals deploy various solutions to alleviate the problem: “immediate bedding,” concierges, and predictive modeling and patient flow simulation, for example. But even without these resource-intensive solutions, your Emergency Department may greatly improve patient satisfaction with a tool as simple as a mobile app providing a dedicated channel for immediate feedback.

When your patients have the opportunity to tell you how they feel about their care before they leave the ER, they feel empowered and acknowledged. A great way to do this is to offer them a mobile app with an option to enter their feedback on the spot, or to take and submit a photo with a contextual comment. Let them know, “We are listening! We are eager to improve our service.”

Using cost-effective beacon technology, you can also track your app users’ dwell times in the ER waiting room and prompt them to vent their frustrations directly, via the app, after a certain period of waiting. Unlike social media channels or review websites, your in-app “vent board” can be entirely controlled by your staff. Your organization’s online reputation will sustain less damage, and your patients will feel more confident that their feedback is actually reaching those in charge.

A mobile app can be extremely helpful in solving momentary problems in the ER setting, and can be distributed directly to your patients upon arrival. However, in a world inundated by apps, the space on your patients’ mobile phones is increasingly valuable. If you get patients to download your hospital app, you do not want them to delete it immediately after discharge. Providing year-round educational value, such as seasonal health advice, immunization reminders, and symptom guides, is a great strategy for fostering patient loyalty and encouraging referrals.
Four Key Steps to Building Your ER App for Success

Mobile technology is developing at an incredibly fast pace, and many solutions launched today will become obsolete tomorrow. Even in the most stressful environment such as the Emergency Department, your patients expect a great mobile user experience – the same experience they have come to expect from all their favorite brands. How can your healthcare brand live up to their expectations? Here are four best practices we follow at MobileSmith and recommend to all our customers:

1. **Focus**
   Identify the exact problem you are trying to solve and the audience you want to target. Pinpoint their mobile moments - the points in time and space when someone pulls out a smartphone to get what they need in their immediate context. Have they just arrived to your ER? Are they experiencing a medical emergency at their home? On the road? Design the mobile use cases targeting your user's mobile moments with your end goal in mind.

2. **Strategize**
   Think of how you are going to distribute your app before you start designing. Will you promote the app via your website and other marketing channels, or will you distribute it directly to patients arriving in your waiting room? The distribution strategy may determine how your home screen will look, and which functions will be included.

3. **Measure**
   Define the key metrics before you start coming up with the list of functions, and benchmark them before you launch the first version of your app. That way, you can quickly gauge if your app is performing as expected, or if it needs fine-tuning (or scrapping and rebuilding altogether!).

4. **Iterate, Iterate, Iterate**
   Spending the bulk of your effort and budget before you have a chance to get user feedback is a risky proposition. Use rapid prototyping tools to get your app into the hands of a focus group as quickly as possible. Process the feedback and push the next iteration, until your reviewers rave about the user experience.

At MobileSmith, we work diligently with our customers’ ED stakeholders to identify key problems and the patient behaviors that contribute to them. Our Customer Success team can help you pinpoint mobile moments you can leverage to modify these behaviors, and to design a polished mobile experience for your patients as well as an easy app management strategy for your staff. We invite you to start a mobile pilot at your Emergency Department! pilot@mobilesmith.com
Leveraging Mobile Apps to Reduce Emergency Room Overcrowding

References

1. ER Visits Continue to Rise Since Implementation of Affordable Care Act. American College of Emergency Physicians (ACEP), May 4, 2015

2. Sullivan, K. ER wait times on rise nationwide. Fierce Healthcare, February 27, 2014


10. Berthene, A. Need a doctor? This app shows wait times at urgent care offices. MobileStrategies360, March 17, 2016

11. Waits for Care and Hospital Beds Growing Dramatically for Psychiatric Emergency Patients. ACEP, October 17, 2016


13. Johnson, S. Patient flow consult: To reduce wait times, one hospital hires outside help, another chooses DIY. Modern Healthcare, May 2, 2015