



Are You Mobile?

The fact that mobile technologies have penetrated most – if not all – industries is hardly surprising, given that they are able to deliver innovative answers to problems that have, traditionally, been hard to resolve

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Over the past five years, there has been an explosion of IT in the healthcare sector. One facet of this boom is mobile health (mHealth), which is defined as any patient health information accessed using mobile technology – such as a smartphone, tablet or any other wireless device. The industry is quickly learning how to deploy this relatively new medium to deal with difficulties and improve workflows for doctors and patients alike.

The growing utilisation of mobiles is inevitable. Current estimates show that there are 3.8 billion mobile device owners, which is a penetration rate of 51% globally – though there are obviously differences from country to country. In Spain, for instance, 87% of the population possesses a mobile device, while only 52% of people living in India own one.

This huge expansion of mobiles into the market has also occurred with alarming speed. The mobile's share of global web traffic in 2009 was less than 1%. Over the course of 6-7 years, that number has erupted to almost 40% of all web traffic for 2016. Those numbers are hard to ignore.

The prevalence and use of mobile technology has caused a recent flood of new mHealth apps, with more than 165,000 available online (1). For us, the question is how and when do we incorporate mobile devices into a clinical trial?

Key Considerations

To answer that, mobile devices need to be regarded as a tool like anything else in the workplace. It goes in the 'clinical trial toolbox' right next to call centres, regulatory binders and tutorial videos; ready to be pulled out and utilised when needed. Just like any new tool, it is important to know what it does, as well as how and when to use it. There are four considerations to be made before deciding how to incorporate mHealth in your clinical trial.

Define the Problem

What problem are you trying to solve? Being able to accurately outline the issue will help you figure out what type of solution is required, and whether or not it involves mobile devices. Here are some examples:

- A study with a paediatric patient population (ages 12-17) shows that participants are resistant to completing study-mandated daily logs and patient-reported outcomes while on the study drug. What is the quickest and easiest way for



them to answer questions and provide feedback? What is needed is the least amount of disruption to a patient's life or daily routine, in order to increase the overall number of participants who accurately follow study guidelines

- To help subjects be more compliant, an e-diary via a mobile application might be an option, in which they can easily answer a series of questions on how they feel each day. The mobile app will pop up a text reminder in the evening if they have not yet responded. Patients can also personalise their reminders with different ringtones and sounds to make reporting outcomes more fun and engaging

The problem in this example is not just study adherence, but study adherence for a younger population. A mobile app is a good tool for this age group, since younger people are more comfortable on mobile devices.

Choose the Right Tool for the Job

While the first example is an effective mobile app solution, it is worth remembering that mHealth encompasses more than just apps on a phone or tablet; mobile websites, text messaging and wearables are also included. These all involve different ways a mobile device can be utilised to help solve a problem.

Let us go back to our toolbox metaphor. Pretend you are a carpenter and you pull out a pair of pliers to put a screw in a board. With enough effort, you may eventually be able to put that screw in the board; however, another tool could save you a lot of time and effort. You can apply the same reasoning to the technology you use in a study. Many choices are available, but which is the right one for the job? The consequences of using the wrong tool are wasted time, effort and money, inferior results and inefficient workflows.

Another problem is that many study participants have trouble remembering to take their medication. How can patients be reminded to do this as prescribed, and thereby improve adherence?

One option could be to make frequent outbound reminder calls to enrolled patients, which adds to the workload of already busy site staff. This approach might yield results – but a better solution would be to send out text reminders, timed alarms and other such tools to help them take their medications at the prescribed time. This should enhance compliance while reducing site burden at the same time, with the added benefit of being less intrusive to participants. Additionally, the same automated platform can also be used for engagement messages and is extremely flexible in design, making it easy to update if necessary.

Understand Your Audience

It is important to know how mobile technology fits into the lives of those in your target audience today. Do special considerations need to be made regarding the patients' condition, demographics, language barriers, culture or customs? Is the solution for healthcare providers? How will their current procedures, size of staff or hours of availability influence their use of mobile solutions? Here are some scenarios to drive home how these factors can affect the impact of mHealth:

- If your study patient population is elderly, or only receives treatment in hospitals, then a web-based recruitment/education website and/or text reminders for the trial would not be an appropriate tactic to deploy, due to the demographics and care setting of the patients being treated
- A doctor's office that uses tablets is likely to be receptive to a mobile app to access site materials, instead of having printed ones. An office that does not employ tablets, however, will not have a mobile app-friendly workflow in place and would, therefore, prevent rapid start-up of the study if materials were not printed
- Use of tutorial videos on a mobile website for patients may be a great idea for patients living in South Korea, where the average connection speed is 20.5MB per second. However, videos may not work well for patients living in certain parts of India, where the average connection speed is a fraction of that (2.5MB per second) and, as mentioned earlier, just 52% of the people in the country own a mobile device
- Geography and demographics of a patient population can determine what type of mobile app to build and what features to include. For instance, adult male participants typically like to use 'tool' parts of mobile apps such as alarms and document viewing, while for paediatric participants, as well as those over the age of 45, gamification as part of engagement and retention is extremely effective

Keep it Simple

It is easy to overthink the problem and create solutions that are bloated with a lot of extras. For example, a common mistake is building an expensive all-encompassing mobile app – when all you really need is a simple, mobile-friendly website. When trying to decide if you need a mobile app or a website, consider these factors. Does your solution need:

- To use a mobile feature such as the camera, GPS or motion sensors?
- To be accessed in areas without internet connectivity?
- To be used frequently?
- To have easy access and quick start-up?

In most instances in which one or more of the above is not needed, a mobile-friendly website will suffice. It is usually cheaper, easier to deploy and possibly more effective.

The Right Choice

Like all recruitment and retention solutions, 'one size fits all' does not apply when deciding on the appropriate mHealth option for your study. Navigating the mHealth space can seem daunting, but selecting the right partner to help guide you through the myriad of solutions in order to make the most effective decisions can be a great first step.

Reference

1. Visit: www.mhealtheconomics.com/largest-global-study-on-mhealth-released-there-are-more-than-165000-mhealth-apps-today

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