The iPad in the Doctor’s Office

Understanding What Physicians and Patients Desire from mHealth Applications

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The Apple iPad has also become a “must have” for pharmaceutical sales reps because of its ease of use and “always on” feature that allows them to quickly display drug information to busy physicians.

A Manhattan Research survey found that 35 percent of doctors surveyed were more likely to ask for a drug sample and 29 percent were more likely to consider prescribing a drug when a pharmaceutical rep used an iPad during an in-person sales pitch. Investment in the iPad is a "no-brainer" for pharmaceutical sales reps, said Monique Levy, vice president of research at Manhattan Research.

But how are physicians and their patients using the iPad and other mobile devices within the clinical setting? That was the focus of a study done by a team consisting of healthcare professionals in an NYU Langone Medical Center department, led by Douglas Elwood, MD, MBA, who is currently Director, GMI Strategy and Innovation at Bristol-Myers Squibb.

In October, 2010, Dr. Elwood and his team launched one of the country's first and largest studies examining the utility of using the iPad in a clinical setting. The process began with physicians, understanding through a baseline assessment what devices they use, how often, and other baseline characteristics. The researchers then provided over two dozen attendees and residents with iPads with preloaded apps/websites and began to monitor usage along a number of metrics.

The research has since expanded to explore how mobile devices are being used in a number of different ways, both among physicians and other healthcare professionals, as well as with patients. The researchers also directly studied patient/caregiver preferences both individually and as they relate to point of care opportunities.

Interview with Dr. Elwood
Dr. Elwood was a guest on the Pharma Marketing Talk Show in July 2012, where he reviewed some top-level results of the NYU study, including physician and patient attitude towards gaming, social media, patient satisfaction, point of care opportunities, and physician communication/education. This article summarizes that interview and includes some results of the study as well as data from other studies related to the use of the iPad and other mobile devices in the clinical setting. Listen to the podcast audio archive here:  http://bit.ly/OQnWhD

The "Wild West" of Mobile Health Must Be Tamed to Ensure Success

“The success of devices like the iPhone and iPad in healthcare has become so pronounced that the Department of Health And Human Services has begun to single-out the use of mobile devices as part of the meaningful use requirements for electronic health records (EHR) systems,” reports Ryan Faas in Cult of Mac ("New Federal Rules Show The Impact of the iPhone and iPad on Healthcare “; see http://bit.ly/Q2AmC).

“In addition to identifying mobile device use, the agency has also taken steps towards explicitly regulating mobile device security needs in the healthcare industry,” noted Faas.

According to Juniper Research, the number of mobile healthcare and medical app downloaded in 2012 will be 44 million and will reach 142 million globally by 2016.

Popularity, however, is not the only measure of success of mobile devices used in the clinical setting. Security, validity and reliability are also important measures of success.

"There are tens of thousands of medical, health and fitness apps on the market and their sheer number makes it difficult for healthcare professionals and consumers to locate apps that operate reliably, are based on valid information, and safeguard users' information,” said Happtique CEO Ben Chodor.

"Happtique's App Certification Program will address an important need in the mHealth field by evaluating apps along these dimensions. We believe the certification process will lead to the identification of truly high quality apps, thereby giving health care professionals and consumers alike the confidence they need in the apps they are recommending or using."

Listen to a live podcast conversation with Ben Chodor, CEO of Happtique, on Tuesday, October 2, 2012, 2:00 PM Eastern US (http://bit.ly/PMT175).

The conversation will focus on his Happtique's standards for certifying medical, health, and fitness apps under Happtique's App Certification Program.

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John Mack: There seems to be a lot going on in terms of what pharmaceutical companies are doing with mobile. I’ve seen a lot of data about how many physicians and patients use mobile devices for health purposes, but your study focused on how physicians and patients actually use mobile in the clinical setting. Can you give us an overview of what that study was about and why you did it?

Dr. Douglas Elwood: Sure, absolutely. As you mentioned, the study assessed the utility of using mobile devices in a real-time clinical setting. The impetus for doing it came from a few different angles. First, as a physician through my training and education, I became very passionate about and interested in patient satisfaction as a metric of care and felt that we could improve patient satisfaction. From a narrow point of view we wanted to know how patients are dealing with their in-hospital or in-clinic visits. More broadly, we were also interested in health outcomes and adherence. We wanted to know how mobility could potentially play a role in all that. So that’s how it started.

We started with 20 iPads, which at that point—October 2010—was a lot just six months after its release. Since then, we’ve been monitoring and expanding that study.

JM: Can you explain the methodology of the study?

DE: Sure. We wanted to first gain an appreciation and an understanding of physician use of mobile devices and which devices they are using. So we started off with that baseline assessment and then we gave them the iPads and in so doing initiated the broader concept of what we wanted to accomplish, which was really understanding what physicians were using them for, trying to get as specific as possible.

We wanted to know how mobile fits into their workflow, are they using apps versus websites, do patients appreciate doctors using iPads and smart phones in the examining room with them, and other questions like that. We also studied other emerging trends such as gaming and social media. Ultimately, we wanted to leverage that information to improve the delivery of care, patient education and outcomes.

JM: Okay. I’m looking at one of the slides of your presentation (see Figure 1, below), which provides numbers regarding the percent of physicians using smartphones versus tablets; namely that 85% of physicians had smart phones but only 6% used tablets. Is that still the case?

Figure 1. Baseline Data
DE: No, absolutely not. We wanted to get an evolution of what was happening then, which was late 2010, to see how that was going to change over the next few years. So we’ve been lucky to have the support from Rusk and NYU to continue the study on a longitudinal basis to understand how these numbers that you’re looking at changed.

When we started, what we saw was pretty heavy use of Blackberries and not much, if any, tablet use. What we found since is just a tremendous adoption of iPads, which has been validated by a number of other studies including Manhattan Research. So the numbers in Figure 1 are just the baseline numbers.

JM: What would you say the use of iPads is amongst physicians—even just in your small group or among physicians generally?

DE: Manhattan Research puts the number at around 65% in its most recent surveys. The other studies that I’ve seen all came in around 55% to 65% for tablets. Smart phones I believe were between 80% and 85% and those numbers have dramatically increased over the last couple of years. In my group at NYU, the adoption rate has been higher, probably because of the study. So there’s some bias there.

We didn’t just go after the tech savvy docs in our study. We wanted to get some of the physicians who were quite frankly afraid of technology and who didn’t want to get another device to do something. We wanted to ensure that we were getting those docs as well as the early adopters.

JM: Can you tell us how many physicians and what kinds of physicians were in the study? We can start with that and then go on to talk about some of the results.

DE: Because we were running the study through Rusk, which is a rehabilitation department, the focus was on rehabilitation physicians. But we felt that that was good for a variety of reasons. There are a number of subspecialties within rehabilitation and it has always been a field that has been a driver of innovation. So even though we didn’t go multispecialty at first, we felt like we were getting a board smattering of different kinds of physicians with different interests.

We started with attendings and residents because we wanted to assess how the iPad was being used on rounds and to see if it could be a viable educational tool not only for the patients but also for the residents who are learning about the material. So at this point we’re up to about 100 physicians who have used the iPad in this study. We’re growing it more with each rotating resident class.

Results:
- 100% reported easy of use, usefulness for rounds and post-rounds education
- 95% reported improved access to real-time information
- 94% reported improved self education
- 92% reported preferred apps to websites
- 85% reported improve workflow and communication
- 80% reported improved board preparation and ACGME learning/application
- 52% reported that they would prefer their EHRs be iPad-accessible

JM: Okay. I’m looking at Figure 1, which shows what docs might find these smart phones and mobile devices (specifically iPads) useful for and I see that the highest score was the streamlining of daily patient care. Is that still valid? It scored over 9 in your scoring system where one is minimally useful and 10 is maximally useful. In what ways are physicians using these devices in daily patient care?

DE: This again was our first assessment when we gave this out as a baseline survey asking them what they think mobile health could or mobile devices might help...
them with. That is, what they thought mobile could be helpful for. That number has since changed. It’s come down a little bit, but I think there’s still a lot of optimism and enthusiasm as to how mobile devices can help streamline daily care and clearly underneath that there are a lot of different elements including patient education, the backflow management of offices, access to information, billing, preop, etc.

So there are a number of different variables within “streamlining of patient care,” some of which I think pharma can play a role in, some of which clearly they can’t. But that’s what physicians are looking for in a lot of cases. So that number now sits at, if my memory serves me, about 8.5 out of 10. So it hasn’t come down that much but that’s clearly still very important to physicians.

**JM:** Another high scoring use is to “facilitate information distribution,” which also scored over 9 in terms of what physicians would like to use these devices for. Does that mean they’re talking about distribution of information to patients or with other physicians?

**DE:** It’s both. They want to be able to tap into their peers to both collect and share information and they want to be able to do the same thing with patients and caregivers, but they want to do it in a way that makes sense and fits into their workflow. So I think if you look around the industry and what’s happening, a lot of the more novel and newer approaches are trying to answer both of those questions, how can physicians interact with other physicians and how can physicians interact with patients in a much more viable, relevant, and interactive manner.

**JM:** “Access to education materials” also scored high—above 8. Does that still apply?

**DE:** Absolutely and that one’s actually now close to a 10. Physicians are really looking for materials that collate information and provide concise portals to information delivery. I think patients are looking for the same thing.

The information age has exploded with the internet and now with mobile access. Information is everywhere and it’s difficult for us to get a handle on that information and to determine what’s reliable, what’s relevant, and what’s most useful on a daily basis. Physicians are not only interested in what education they can get, but also how they can use that information in a way that makes sense to them as a physician and to their patients.

**JM:** Pharmaceutical companies, as you know, are interested in developing apps for physicians and patients. I’ve seen some that could come under the category of “streamlining daily patient care” such as apps that help physicians diagnose medical conditions.

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**Development and Exploration of a Multifaceted Social Platform to Improve Patient Education, Communication, and Activity**

**Purpose:**

This study was designed to explore how a multifaceted social platform might influence patient education, communication, and activity. Objectives included understanding the importance of making approaches to patient engagement in these areas personalized, innovative, accessible, and robust.

**Methods:**

Patients from one of the largest and most well-respected support groups for amputees in the country participated in this study. Different interventions were offered including: an Internet portal for videos, education, and other support information; social media outlets; a call line which provided opportunities for patients to connect in real-time; and social networking events.

**Results:**

- 76% of patients would like to join a social network relevant to need
- 88% of patients felt that various sources are additive
- 64% were classified as “masters” through questions related to sophistication of knowledge of platform (baseline: 12%)
- 72% had invited in their peers to join the environment (44% of whom were not patients)
- 94% desired better real-time information to help navigate care and provide social collaboration and tools

Then there are the informational, educational apps and information that physicians have always rated highly among the services they would like to get from pharmaceutical reps. Do you think those two areas are examples of how pharma can help provide mobile applications that physicians will find useful?

**DE:** Absolutely. I think pharma is ideally situated to provide that educational material and through partnerships to maximize what’s being delivered.

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Physicians want and need it. But as Steve Jobs said, a lot of people don’t know what they want until they actually see it. I think pharma has the opportunity to start to create a new paradigm if you will of how education becomes more relevant, becomes more to the point, and becomes more integrated not only in the physician workflow but also in interactions with patients. So I think it’s the next iteration of educational development and sharing.

**JM:** It sounds like iPharma university. Another use of mobile that scored high with physicians is the ability to “broaden patient interaction,” which scored nearly a 9 on your scale. What exactly does that mean?

**DE:** I think physicians want to help the patients obtain and get to better outcomes. You know, most physicians—I’d say very close to 100% of physicians—become physicians because they want to help patients, that’s their primary motive. Unfortunately, the way the system is, physicians and other healthcare providers don’t get the time that they need to interact effectively with patients to help deliver the messages that they need to promote a better understanding, better education, and ultimately better outcomes.

Mobile devices are a way to do that and physicians are recognizing that that’s the case. Mobile apps can extend the conversation from the 5, 10, 15 minutes they have in the office to something that goes out of the office. Clearly, the time availability, the bandwidth is not there for a physician to interact outside of the clinical environment with every patient he or she has. But I think more to the point is to create tools or tap into tools to drive awareness, to drive education for those patients that exist and survive outside of that visit. I think that gives physicians a real sense that they’re doing what they want to do and they’re doing it in the new way. So broadening the patient interaction I think is really extending beyond the four walls of the clinic and getting out into the real world with the patient as much as possible.

**JM:** Recently a pharmaceutical company developed an app focused on patients and I guess it’s about patient outcomes. It’s also about adherence. It allows patients to do a number of things relating to adherence and to keep track of physician appointments and things like that. Would that be something that physicians would welcome to see patients come in with and, you know, you think, fall under the category of patient interaction that you mentioned?

**DE:** Ultimately, the answer is “it depends.” If it’s providing value to the physician and to the patient, I think it will be appreciated. I think the way that it’s executed really matters. So what you’ve seen not only

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**Boomer Smartphone Survey**

Source: Mitchell Research & Communications, Inc. [www.mitchellpr.com](http://www.mitchellpr.com)

The “Baby Boomer” generation (those born 1946-64) are an important demographic for pharmaceutical companies, which sell many drugs for the treatment of medical conditions that ail boomers. There are 78 million Boomers in the U.S. and 24% own smartphones. These 19 million Boomer smartphone users are a huge potential market for mobile app developers, including pharmaceutical companies.

A new survey of 600 smartphone users conducted by Mitchell Research & Communications, Inc., shows a solid majority (57%) of Boomers are likely to download a general information medical app. Almost half (48%) would download an app to monitor heart disease, diabetes or other chronic diseases.

Almost half (47%) would also download an app to monitor weight and exercise. “When asked who would make them most likely to download a health and wellness app, a doctor (60%) was the overwhelming choice over family (18%) or friends (5%),” said Suzie Mitchell, CEO of Mitchell PR.

**Respondent Likelihood of Downloading Health and Wellness App:**

Younger Boomers are less likely to be persuaded by their doctor and more likely to be persuaded by their family to download a health and wellness app, than the oldest two groups of Boomers.

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from pharma but from companies in general is a quick move into mobile in a lot of different areas and a lot of failures, which is expected I think with any new technology.

But I think the opportunity exists for understanding the workflow not only of physicians but also of patients and providing valuable tools for managing that workflow. Are physicians going to appreciate that? They will if they are able to interact with it or to monitor it in a way that helps the patient. So I think there are steps to be taken and I think you’ve seen some leaders in the space and some folks who are still trying to figure it out and both of them I think are worthwhile.

JM: Right. I was thinking about how pharmaceutical companies let patients know about these apps. Obviously, you know, they don’t have control over iTunes, what’s featured on iTunes. They have their websites but they’re not likely to create TV ads about an iPhone app. So they need some help. Would physicians—if they like these apps, if they know about them—would they recommend them to their patients? Do you think pharmaceutical companies who are developing these kinds of patient apps would go directly to physicians and include that information about their apps to physicians that they might be able to pass it on to their patients?

DE: I think that involving physicians will be important for a number of reasons. In fact, getting their input would make the apps even better.

There are other ways to drive awareness. Clearly, there’s a lot of buzz and a lot of hype around mobile and even gaming. I think there’s a considerable amount of enthusiasm around those approaches as there should be. However, they still need to be contextualized and it needs to be seen in the context of what’s already being done. So we’re not looking to completely reinvent how we engage consumers, how we engage physicians. We’re rather trying to extend it I think and make it better. So in that sense driving awareness can come through traditional methods as well, can come from the folks who are speaking to the physicians.

JM: It sounds like a good idea if I must say so myself to maybe help open doors for sales reps to physicians. But that’s another matter. I think we’ve used up a lot of your time and I wanted to make sure you are able to tell us everything you wanted to say about this study. Did we leave anything out that was important to mention? For example, it’s still going on I understand and you’re still involved with it?

DE: It is. So BMS was great enough to allow me to continue to practice up in NYU so I do see patients up there and I continue to run these studies. We’ve since branched it out as we alluded to earlier to social

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**Gaming in a New Dimension**

**Started:**
Feb. 2011; Status: still running; Data from April 2012; n=74

**Purpose:**
Assess how a gaming approach may influence the connection between patient engagement and activity, in a real-time clinical setting and in a support group.

**Methods:**
MatchMyMoves, a simple mobile application, was designed to encourage movement through dance and to enhance overall engagement and activity levels of participants.

Participants could access the app through iTunes, set goals, track progress, and share results. Participants provided feedback on the app and general principles surrounding gaming.

**Results:**
- 12% pre-activity understanding of how games are used in health; 96% post
- 62% had “very good” experience with it; 18% “good”; 9% “not interested”
- 54% listed scoring as top feature they would use again; 37% social
- 85% stated they would like to see it expanded into other areas as well (e.g. education, suggestions for activity, etc.)

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Listen to this live podcast conversation with Ben Chodor, CEO of Happitique, on on Tuesday, Oct 2, 2012, 2:00 PM Eastern US. Or listen to podcast archive afterward. More info here: http://bit.ly/PMT175

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networking and gaming to understand how those are integral not only for physicians but for patients in the interaction. We look forward to publishing and presenting those results in a number of conferences coming up.

**Conclusion**

As companies flock to this space, it is critical to understand how both physicians and patients approach the topic of mHealth. While broad-based surveys are helpful to garner an appreciation of general adoption, they arguably do not provide the level of information required for companies to be successful in this space and to create tools that may help transform the industry. As policy measures like Comparative Effectiveness and Meaningful Use are increasingly implemented and ACOs and value-based reimbursement (among other expanding trends) develop, the conversion from idea to execution becomes even more relevant. This research, and the insights gathered from it, in conjunction with other similar studies, may help guide how the mHealth movement develops.

**BONUS CONTENT**

**Take One App Daily as Prescribed by Your Physician**

Happtique, a mobile health application store and total app management solution, on August 20, 2012, announced the commencement of its pilot program of mRx™, Happtique’s patent-pending solution that enables physicians and other health practitioners to electronically prescribe medical, health, and fitness apps to their patients. mRx™ is designed to improve communications between practitioners and their patients, patient engagement and adherence, and ultimately patients’ health.

“Happtique is pleased to officially launch the mRx™ Pilot Program. Given the tens of thousands of medical, health, and fitness apps on the market today, patients need guidance from health care professionals as they select and use these apps to manage their health,” said Ben Chodor, Happtique’s CEO. “We also firmly believe that app prescribing will prove an effective tool for facilitating positive patient behavior change, which will foster self-management and monitoring and ultimately result in improved health outcomes and lowered health care costs. We welcome the participation of health care practitioners across the U.S. in our mRx™ Pilot Program and look forward to receiving their feedback on mRx,” said Chodor.

The pilot will focus particularly on cardiology, rheumatology, endocrinology, orthopedics, physical therapy, and fitness training. For these areas, Happtique consulted a specialist in each field and reviewed relevant websites to develop a sample list of apps for each of the targeted areas. Practitioners may prescribe apps from the sample list or other apps of their choice. Licensed or certified health care practitioners in other specialties and disciplines are also welcome to participate in the mRx™ pilot. Such practitioners may include physicians in specialties other than those described previously, nurses, dietitians, therapists (i.e., physical, occupational, respiratory and speech), chiropractors, social workers, etc. Practitioners in these fields will choose the apps they wish to prescribe. The pilot will focus on the usability of mRx™ along with practitioner and patient satisfaction. While the pilot will track how many apps are prescribed and how many times the “fill” button is clicked after an app prescription is sent, it will not measure app usage or clinical outcomes.

“As a rheumatologist, it is particularly important that I work with my patients to enable them to take responsibility for their own health,” said Steven Magid, M.D., of New York-based Hospital for Special Surgery. "As the first physician to prescribe these mobile apps under this program, I am setting a path for my colleagues and patients alike to use these tools to enhance doctor-patient communication and, ultimately, patients’ health.” Specialists at Hospital for Special Surgery, a national leader in orthopedics and rheumatology, work to provide the best possible outcomes for patients with challenging diseases such as lupus, as well as those with inflammatory or degenerative arthritis.


**I Give Lilly's Glucagon Injection Branded Mobile App an A+ But Its Injection Technology a D-**

(Originally published in Pharma Marketing News)

Lilly recently (September 4, 2012) launched the "Lilly Glucagon Mobile App" to support diabetes caregivers. According to the press release:

"The Lilly Glucagon Mobile App is a tool to teach how to use Glucagon for Injection, through simulated practice. Glucagon, 1 mg (1 unit), is indicated to treat severe

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hypoglycemia (low blood sugar). Severe hypoglycemia due to insulin may result in loss of consciousness (insulin coma). The app is designed to help people be more prepared, and also provide an opportunity to store locations and expiration dates of their Lilly Glucagon Emergency Kits. The Lilly Glucagon Mobile App is now available on the iTunes® store as a free download for iPhone® or iPad® mobile devices."

The app includes an animated video showing caregivers how to administer the drug, which is not an easy thing to do.

This is the second BRANDED mobile app that I am aware of. The first was Pfizer's Recipes2Go app launched in May, 2012. The app promoted the Lipitor $4 co-pay card and used recipes to entice users into downloading the app. That app has since disappeared after I reported that the promo page on the iTunes store was, in essence, an direct-to-consumer ad for Lipitor. The page mentioned Lipitor and its indication (treatment of high cholesterol) but failed to include the Important Safety Information (ISI) as required by the FDA (read "Pfizer's Short-lived LIPITOR Branded Mobile App"; http://bit.ly/NSc1z0).

I'm not sure if Pfizer removed the app from the iTunes store because of the complaint I sent to the FDA "Bad Ad" program, or because the co-pay program was a failure (see "Pfizer Throws In the Lipitor Marketing Towel"; http://bit.ly/NSca5q).

In any case, Lilly's Glucagon Injection app does not repeat the mistakes made by Pfizer. The i tunes promo page for Lilly's app mentions Glucagon but does NOT mention the indication (http://bit.ly/NScbq2). The app also clearly features the ISI and does not require users to scroll down several screens to see it as does the Pfizer app.

I rate this app an A+ because of the above, but mostly because it is likely to be well-received by caregivers—although the same instructions and animations could be seen on the Web. This is one app that physicians might "prescribe" to their patients' caregivers, but I also think physicians should download the app on their own iPads to show to caregivers at the point of care.

While the app may rate an A+, the injection technology that it illustrates gets a D- from me. There should be an easier, more automated, one-step way to prepare and administer this product instead of inventing a new technology app to support an old technology medical device!