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The Impact of Mobile Technology in the Pharmaceutical Market

*How Mobile Healthcare Can Promote
Patient Adherence and Engagement*

White Paper
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Introduction

With the proliferation of smartphones, mobile healthcare (mHealth) solutions have started to play an increasingly important role in the pharmaceutical market. mHealth is a relatively recent development and has the potential to help foster a more efficient healthcare system. This concept is especially relevant given the greater focus on implementing a value-based delivery model. The pharmaceutical industry has responded by utilizing new technologies to help facilitate the patient-doctor relationship and bolster patient engagement.

mHealth means greater attention can be placed on encouraging patient adherence to treatment plans through the use of mobile applications. It may also assist in improving the results of patient reported outcomes (PROs) and promoting health and wellness. At the same time, pharmaceutical companies are looking for the ability to better analyze and leverage their data, with the aim of incentivizing patient adherence and increasing revenue.

Patient Adherence

In reality today, many patients who are prescribed medications do not fill their prescriptions. Furthermore, a significant percentage of those who fill their prescriptions fail to take their medication on a regular basis.

Pharmaceutical marketers are interested in innovative ways to promote their brands, and improving communication platforms through mobile is one possible means of achieving higher compliance rates.

For both healthcare payers and providers, mobile technology can improve administrative efficiency and accuracy. This pertains to billing, scheduling, claims processing, and other workflow issues. Incentivizing better healthcare outcomes and other cost saving measures through Accountable Care Organizations (ACOs) is another opportunity for mHealth adoption to become more widespread. Meanwhile, patients are interested in access to medical information and want more control over their healthcare options.

Viewed from a patients' standpoint, text messages and automated reminders are a convenient and non-intrusive means of empowerment and greater control. Mobile dashboards can also make it easier to track dosages and organize medication schedules. Pharmaceutical companies in turn are able to benefit from gaining additional insight

on patients and learning more about how to overcome longstanding compliance challenges.

Another advancement to facilitate adherence is the creation of what is referred to as the "smart pill," which has the ability to communicate with one's smartphone. The smart pill's internal chip and a sensor placed on the user's body allow vital information to be relayed to a nurse or physician. Likewise, notifications can be sent to relatives or caregivers if a patient forgets to take a pill or refill a subscription. Patient adherence can even take the form of gamification. With this approach, users are educated about symptoms and potential side-effects of a prescription drug by interacting with the application. The ultimate aim is to prompt a change in behavior. Although many of these applications are free to download, one challenge is that non-adherence often relates to the elderly, who have a lower rate of smartphone ownership than younger age groups.

Mobile applications are a relatively low cost way for pharmaceutical companies to strengthen consumer engagement by offering personal and relevant information, such as assisting patients with finding providers in their network or making it easier to promote mail order pharmacy options. Pharmacy benefit managers (PBMs) are also utilizing mobile applications to help patients access their prescription plan benefits and compare the costs of brand name versus generic drugs.

One of the goals of mHealth is to better enable remote monitoring, and its emergence is influencing patient reported outcomes (PROs) in several ways. Better self-reporting and less frequent logistical issues can lead to higher compliance and retention rates during clinical trials, ultimately contributing to more accurate results. Similarly, mobile technology may improve communication throughout the clinical trial process as data collection is streamlined and delivered in real-time.

Patient Engagement

mHealth can also improve preventive care. Patients for example can use mobile technology to better manage long-term conditions such as diabetes and hypertension. Weight loss applications that record caloric intake and fitness applications that measure calories burned during workouts are two such examples. Mobile applications capable of monitoring blood glucose levels are serving as useful aides

for diabetics as well. These developments can enable pharmaceutical marketers to improve brand awareness by supporting consumers who are taking steps to proactively improve their health outcomes.

At the same time, preventive care and establishing a “culture of health” in the workplace is an important trend among employers. Many see the benefits of incentivizing the use of mobile technology in order to lower their insurance premiums and reduce absenteeism. The Center for Disease Control and Prevention (CDC) has estimated that preventable and chronic illnesses make up approximately 70 percent of all U.S. healthcare spending. Therefore, increasing patient engagement to mitigate non-adherence and promote wellness is vital for the pharmaceutical industry as life expectancies continue to rise.

Mobile can also assist with public education awareness campaigns. This is necessary in an interconnected world, where the ability to identify the geographic location of a rapidly spreading illness may prevent hospitalizations and save lives. Patients and doctors in developing countries have been quick to embrace mobile technology, making it easier for pharmaceutical companies to reach traditionally underserved populations.

M&A Activity

mHealth has become a driver of merger and acquisition (M&A) activity, due to many of the factors discussed so far. One high value transaction in 2013 was athenahealth's acquisition of Epocrates, a point of care medical application that provides information through digital and mobile channels, for \$293 million. athenahealth is positioned to leverage Epocrates' mobile applications and workflows with this acquisition as it expands its cloud based services. Regarding preventive care, Cerner Corporation acquired PureWellness, which has an extensive online platform with an array of mobile applications. Healthcare companies will likely continue to add mobile solutions to their offerings going forward.

Adoption Obstacles

Challenges to mHealth adoption include security concerns and regulatory uncertainty. mHealth systems tend to be fairly open and operated on a variety of computer networks, leading to vulnerabilities associated with identity protection and sensitive behavioral information. Hurdles also need

to be overcome when integrating mobile technology into existing IT systems. In addition, regulations are still being developed to settle privacy issues. Regulatory authority over the mHealth market in the U.S. is maintained by the Food and Drug Administration (FDA). However, because these technologies are so broad, they often fall under the purview of several federal agencies.

Conclusion

Despite these challenges, the technological advancements in mHealth are fostering conditions favorable to increased patient engagement and adherence. New diagnostic tools that allow for easier interaction with physicians can help with wellness and preventive health. Moreover, medical professionals who use mobile technology to collect data from their patients and improve point of care documentation efforts are also benefitting. Pharmaceutical companies are aiming to influence consumer healthcare decisions and are using mobile to connect their products with the proper doctors and patients.

As the marketplace becomes more competitive, a key challenge for software and technology companies serving the pharmaceutical industry will be to develop and effectively monetize their mobile solutions to stay ahead of the curve.

About Berkery Noyes

Founded in 1980, Berkery Noyes is an independent investment bank that provides M&A advisory and financial consulting services to middle market companies in the information and technology industries. The firm offers skilled transaction management to publicly traded and privately held businesses and private equity groups in both sell-side and buy-side transactions.

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Jeffrey Smith is a Managing Director in the Healthcare Group at investment bank Berkery Noyes. He specializes in providing merger and acquisition (M&A) advisory services to technology, information, and services companies in the healthcare, life sciences, and pharmaceutical markets. Jeff's transaction experience includes the sale of Image Solutions, Inc. to Computer Sciences Corporation and Relsys International to Oracle Corporation, among many others.