Mobile Apps: Ready to Meet the Medication Adherence Challenge?

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Consider this clinical care conundrum: Medical science has transformed HIV into a manageable chronic disease, and many types of cancer into curable conditions, while also expanding therapeutic options for challenging chronic diseases such as diabetes. Yet, many Americans are not benefiting from these treatment advances. A major culprit? Poor medication adherence — a problem that leads to lower quality of life, preventable deaths and avoidable medical spending – to the tune of $105 billion directly linked to medication non-adherence in the US alone.

A frustrating situation, indeed.

Fortunately, though, the healthcare industry is beginning to address this medication adherence dilemma – a predicament that earned the moniker of the "nation's other drug problem" in Enhancing Prescription Medication Adherence: A National Action Plan (http://www.talkaboutrx.org/documents/enhancing_prescription_medicine_adherence.pdf).

One of the recommendations of this watershed report, which was initially issued in 2007 by the National Council on Patient Information and Education (NICPIE), was to take advantage of health IT to improve medication adherence.

The recent proliferation of mobile health apps is the first step toward bringing this recommended health IT action item to fruition. There are some 40,000 mobile healthcare apps (http://www.imshealth.com/deployedfiles/imshealth/Global/Content/Corporate/IMS%20Health%20Institute/Reports/Patient_Apps/IIHI_Patient_Apps_Report.pdf) available through iTunes. However, the large majority of these apps provide limited "information only functionality" – and that information relates primarily to diet and exercise regimens – as opposed to patient education, medical management, provider-patient communication and remote monitoring of multiple chronic conditions.

At least one app, WellDoc® (http://www.welldoc.com/) has demonstrated statistically significant improvements in glucose control (via A1c tracking), though there are questions about the study design. This is a diabetes management app that includes remote monitoring of glucose and other parameters, as well as two-way communication capability. Such disease management apps ideally include educational material that is engaging so that patients know why it is important to treat their disease for life, even if they don't feel ill, as is the case with hypertension. Obviously, many more clinical trials are needed in various areas, but don't bet against the demonstration of clinical validity and utility of medical apps in the near future.

The potential associated with apps and improved medication adherence is blatantly obvious. The simple fact that patients carry smartphones with them wherever they go means that app reminders and alerts will prompt them to take their medications as intended. That, in and of itself, can go a long way in getting patients on the right medication adherence track.

Still, as an industry, we have to embrace mobile apps in the right way to actually optimize their inherent potential and produce improved clinical care outcomes. To be widely adopted, I have developed my top five list of criteria that apps should have to move the needle forward on medication adherence:

1. Support the ability for patients and providers to share information. For example, diabetic patients should use a mobile app similar to the app (WellDoc®) noted earlier. Providers can then take more immediate action and adjust medications and interventions in real time.

2. Actually be prescribed by clinicians. Patients will be much more likely to adopt and use medication adherence apps if a clinician writes a prescription. The level of adoption is likely to be much lower when the clinician simply says that it might be a good idea to use the app. NCPIE's report has called for evidence-based app guideline development. Obviously a more concerted effort to carry out well-designed app scientific trials will be necessary to form the foundation for such guidelines.

3. Qualify for financial reimbursement. Such payment will make it more likely for physicians and others to use apps with patients. Payers, however, will not cover apps until there is scientific evidence that apps actually do result in improved outcomes.

4. Allow patients to access useful, reliable information. For example, apps that include a medication vocabulary from FDB MedKnowledge enable patients to look up drug information and then create a list of their medications. Likewise, disease management apps take it a step further by providing medical condition-related education/information as well. A component of a disease management app would be patient medication information – ideally addressing low literacy, and multi-language needs of the patient population. A database tailored to fit these specific needs is Polyglot Systems' Meducation® (http://www.fdbhealth.com/solutions/meducation/).

5. Resonate with patients who rely on medications the most. Older patients who are likely to suffer from multiple conditions, are the ones most likely to benefit from medication adherence apps. However, this demographic is less comfortable with the use of smartphones, so providers need to convince them to take the plunge. Enhanced user-friendly smartphone interfaces, plus the aging of a tech-competent, large "Boomer" population, bodes well for widespread app adoption.

Certainly, these are just some of the ways that we can optimize the use of mobile apps to improve medication adherence. But I'd welcome your thoughts on this subject. What else can be done – both with mobile apps and otherwise – to help cure "our nation's other drug problem?"

About Nicholas Ratto, PharmD
Nicholas Ratto is the Manager of FDB's Consumer Drug Information group, responsible for the development and updating of all consumer-facing content, including consumer medication information monographs, counseling messages, auxiliary prescription label warnings, and the High Risk Medication Module. Connect with Nicholas on (http://www.linkedin.com/pub/nicholas-ratto/a5/536/907)LinkedIn (https://www.linkedin.com/pub/nicholas-ratto/a5/536/907).

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