Implementing Mobile Health Programs

By William Tella, President and Chief Executive Officer, GenerationOne

Over a period of just 10 years, people across the globe have changed the basic nature of their interactions from one in which they leave their homes to visit friends, offices, stores and theaters to one in which they draw all those destinations into their shirt pockets and handbags. They have redefined the way they work, play and care for themselves with a single word: "mobility."

Today, 91 percent of adults own cell phones and 56 percent have a smartphone, leading to a consumer preference for using the devices as their hub for communications, shopping, entertainment, travel, photography, education and networking. The editors of the journal Telemedicine and e-Health point out that the 6.835 billion cell phone subscribers globally compares with a world population of only 7.1 billion, adding that "there have been more cell phones manufactured and sold worldwide in the past 18 months than televisions in all of human history."[1] According to the U.N., more people have access to cell phones than to plumbing or electricity. Many surveys in the U.S. have shown that the average smartphone owner checks her phone at least 150 times a day.

It should not be surprising, therefore, that consumers now are turning to their mobile devices to help manage their health. Fitness apps, for example, have rapidly become a popular method of monitoring an individual's overall health and habits. More significantly, mobile phones open the opportunity to help monitor, advise and collect vital data from patients during the periods between clinician visits.

When practicing population health management, medical organizations commonly associate four social determinants that contribute to a patient's health outcomes, each posing a different weight on the outcome. Clinical care comprises 20 percent, physical environment is 10 percent, health behaviors represent 30 percent, and the final 40 percent consists of socioeconomic factors.[2]

Clearly, personal interactions between patient and provider should recur much more often if they are to help compensate for the influence of negative social, economic and behavioral factors.

Mobile health, or mHealth, enables health plans, population health management organizations, physicians and others to significantly increase patient compliance with their prescribed protocols through frequent communications. mHealth programs have extraordinary potential to drive behavioral change and produce the data needed to help population health management programs improve health outcomes and drive down costs.

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[1] Editorial, Telemedicine and e-Health, February, 2014

[2] http://www.htrnews.com/apps/pbcs.dll/article?AID=2014303160247

The idea of using mobile devices in healthcare-related venues may seem as unusual as the concept of buying a pair of shoes online or asking your phone for directions once did. But researchers from five universities in the U.S. and China who reviewed international studies on smartphone use for long-term health management reported, "With the help of health-related smartphone apps, patients with chronic conditions (1) felt secure in the knowledge that their illnesses were closely monitored, (2) participated in their own health management more effectively, and (3) felt that they had not been forgotten by their doctors and were taken good care of even outside the hospital/clinic."[3]

In one of the studies, from Australia, a weight-loss program involved an intervention group of 50 participants and a control group of 150 in a 10,000 Steps program. As described in the study, "An iStepLog application was designed to allow members of the 10,000 Steps program to record their daily physical activity levels on their mobile device and synchronize this information with their online Step Log. Only the intervention group received the iStepLog application and used it on their own iPhone or iPod touch. The control group was selected retrospectively, with the primary investigator blinded to the study period data and a strict protocol adopted."

The results were illustrative of the potential of mHealth technology. The intervention group logged steps for an average of 62 days, compared with just 41 days for the control group. The intervention participants used their app more than 71 percent of the time to log steps. Program managers reported the intervention may assist in maintaining participant engagement and behavior change, noting, "The use of the application was associated with an increased likelihood to log steps daily and an increased likelihood to log greater than 10,000 steps on each entry."

Such research shows that mobile-health tools can be well accepted and effective. The term "mobile health" applies to the activity of any healthcare organization that incorporates the use of handheld mobile devices—smart phones, basic cell phones and tablets--for communicating with and among participants, clinicians and health plans. Population health management companies are beginning to explore how mHealth initiatives can be leveraged to achieve healthier people, thereby driving down overall costs.

mHealth today seeks to take full advantage of the capabilities of handheld communication devices and their owners' predilection for focusing on them. Often mHealth assumes the form of reminders, transmitted by text messages or secure Web sessions, designed to encourage patients to take their medication, check their blood sugar or carry out some other part of a medical or wellness regimen. Advanced systems allow patients to enter data or ask and answer questions in response to such messages and compile these interactions into dashboards and charts for use by care managers and physicians.

[3] Jingting Wang, MSN, et. al., "Smartphone Interventions for Long-Term Health Management of Chronic Diseases: An Integrative Review, Telemedicine and e-Health, June, 2014.

Mobile heath is not only helping improve clinical outcomes and lowering medical costs, but it also is becoming a way to differentiate services and win over new and maintain existing customers as they are given more choices for health plans and providers. Healthcare organizations can use data from mHealth programs as a valuable element of population health management programs.

GenerationOne has been a leader in advancing mHealth, using its deep experience in healthcare, technology and understanding behavioral science to identify best practices and key elements to include when designing, implementing and managing mHealth programs for any condition, campaign or wellness initiative.

First steps in administering mHealth programs

As a primary consideration in administering mHealth programs, GenerationOne recommends that organizations focus on the initial target population. Focus first on the population that is *most likely* to change. It will produce the best financial and clinical opportunities and the best results early on and build positive reinforcement with everyone involved in the project. Define sub-groups, based on these participant categories:

- **Wellness campaigns:** Those who are well need to stay well by completing preventive tests, such as annual physicals and other exams.
- **Health risks:** Those who have health risks need to change their health behaviors so they don't develop the conditions for which they're at risk, as suggested by pre-cancerous indicators and diabetes screening.
- **Chronic conditions:** Those who have chronic conditions must prevent further complications by closing care gaps and working on health behaviors, such as those with co-morbid conditions like diabetes and congestive heart failure.

GenerationOne has found that setting clear and measurable performance objectives for the mHealth program is essential to its ultimate success. When these objectives lead the effort and the program has been focused on appropriate subgroups, participation rates have demonstrably improved.

Your objective should be controlling what you can control. Use communications as a trigger for sub-groups that are the most technologically savvy and that are motivated to change. While everyone wants to be healthy, motivation levels differ. That is why you want to focus initially on those who are highly motivated, allowing you to validate your triggers and the ability of participants to engage with the technology before broadening the program.

Start down the mHealth path with half a dozen steps:

1. Select a participant audience that has demonstrated involvement in care management programs.
2. Determine what is hindering the targeted behavior, such as a missing trigger or a challenging task.

3. Choose a simple, yet impactful, behavior to target, such as taking medications or monitoring blood pressure.
4. Choose an appropriate communication channel for participants, such as a mobile device with which they are already comfortable and proficient, ideally their existing smartphone.
5. Select a platform technology that is easy to get up and running and that offers an intuitive user interface.
6. Ensure that your choice of platforms constantly identifies participants who need the most attention of the care organization to maintain compliance, focusing personnel time on those who require one-to-one communication.

Next, examine your own perceptions about behavior change in light of recent studies. Research conducted by B.J. Fogg and his team at the Stanford University Persuasive Technology Lab has identified 10 mistakes in behavior change that should be avoided when implementing change-based programs, and GenerationOne incorporates these findings in its recommendations.

10 Mistakes in Behavior Change

1. **Relying on willpower for long-term change.** Implementations that require willpower alone—such as asking participants to change their habits without reinforcement or reward—are destined to fail. Imagine willpower doesn't exist, the Stanford group advises. That's Step #1 to a better future.
2. **Attempting big leaps instead of baby steps.** Pursue tiny successes, one after another. For example, instead of asking patients immediately to give up all carbs, start with pasta. Then move on to other foods over time.
3. **Ignoring how environment shapes behaviors.** Change your context and you change your life. Compliance is very different for someone who commutes every day to an office vs. someone who is homebound.
4. **Trying to stop old behaviors instead of creating new ones.** Focus on action, not avoidance. Instead of asking a patient to stop sitting around the house so much, create an incentive to walk in the neighborhood, perhaps to visit an entertainment or recreation center.
5. **Blaming failures on lack of motivation.** Make the behavior easier to do. It may be difficult for people to remember and act on every occasion when they should measure their blood sugar, for example. Use technology to remind them and ask for input.
6. **Underestimating the power of triggers.** No behavior happens without one. Instead of simply encouraging people to eat less, for instance, first explore the triggers that cause them to turn to food.
7. **Believing that information leads to action**. We humans aren't so rational. Information only helps for those already motivated to act. Reward, pleasure and a sense of progress/achievement work better to prompt action.

8. **Focusing on abstract goals more than concrete behaviors**. Abstract: Get in shape. Behavior: Walk 15 minutes today.
9. **Seeking to change behavior forever, not for a short time**. A fixed period works better than forever. Create a program to increase walking distance and time over the next 10 days, or work out a 30-day diet. Then build on that progress.
10. **Assuming that behavior change is difficult.** It is not so hard when you have the right process. When individuals have support—both personal and technological—they can change behavior more easily.

Evaluating the right technology for sub-groups

Once you are ready to start communications with participants, identify the best technological means for reaching each sub-group. The most flexible programs allow participants to use their own cell phone, with text messages or secure Web sessions that provide consumer-friendly response mechanisms.

Communication is best when it enables two-way messaging so that the mHealth program becomes a truly participative conversation. Combining text messages with links to secure websites, case managers can communicate:

- Self-care
- Testing and medication reminders
- Questionnaires
- Collection of participant data
- Participant-specific health tips
- Appointment reminders
- Case manager and doctor notifications for certain triggers

Complete the communication protocol by deciding on the content, frequency and timing of messaging, tailored to the situation, lifestyle and daily habits of individual participants, as well as the triggers for engaging the target audience.

Measurement and midcourse corrections

A final stage of implementation incorporates the evaluation of clinical, financial and satisfaction outcomes on a regular basis, with the goal of continuous program quality improvement through adjustments as the effort moves forward.

The entire population health management process relies heavily on the technology's robust set of reporting and analytics tools to provide monitoring of the program's overall success. This measurement process offers you the opportunity to define risk and population health management strategies by simply answering the most important questions regarding the actual success of your program. Primarily, you should determine:

- Which content has been the most readily received and through which device so that you can create communications with content and in a style that participants will read, in a format that works on their device. Make adjustments as needed.
- The specific levels of behavioral changes in participants, such as the proportion of medications taken as directed or follow-up appointments scheduled.

The role of GenerationOne

To enable these programs, GenerationOne provides mHealth technology, services and best-practices consulting for health plans, disease management organizations, wellness organizations and healthcare professionals. The GenerationOne mHealth Connect™ service can support unlimited care paths, including chronic care and wellness initiatives. It empowers individuals to actively manage their health and wellness so that participants with chronic illness can improve outcomes and healthy individuals can optimize their health status. Our continuous transmission and capture of vital health information transforms care from retroactive, event-based population health management to participant empowerment with timely detection and prioritized management. Individuals participate through text-messages or secure browser displays on their own smartphones, through the texting capabilities of their feature phones or by interactive voice response on their landline phones.

GenerationOne specializes in delivering technology solutions that help the healthcare industry overcome challenges in implementing mHealth programs. We anticipate the direction and ever evolving needs of the healthcare industry, and our team is committed to innovation and providing our customers with breakthrough solutions.