Health-e-Apps: A project to encourage effective use of mobile health applications

The rapid growth of mobile technologies means anyone with a smart phone can access health information and track personal medical data—
an opportunity that requires communication between health professionals and consumers to ensure appropriate use of these tools.

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The use of mobile devices worldwide and in Canada is increasing rapidly. Data from surveys conducted by the Canadian Wireless Telecommunications Association (CWTA) reveal that almost 27 million Canadians subscribed to a mobile phone service in 2012,[1] and that smart phone users in Canada increased from 33% of all mobile phone users in March 2011 to 48% in March 2012.[2] Similarly, the most recent Ipsos Reid Mobil-ology poll, conducted online in January 2013, found that almost half of all Canadians (47%) now use smart phones.[3]

With the growth of mobile technologies there is also rapidly rising interest in using smart phones for health and wellness. A survey of Canadians conducted by Rogers Communications for a report published in 2012 found the top uses for smart phones included text messaging (88%), voice calls (70%), downloading and us-

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ing apps (68%), surfing the Internet (67%), connecting to social networks (61%), playing games (60%), and listening to music (57%).[2] CTWA found that 70% of smart phone users downloaded apps in 2012, compared with 58% in 2011.[2] In addition, CTWA found that 26% of mobile phone users access health and wellness tools through their devices. Common health tools include calorie counters (16%) and fitness or exercise trackers (11%). Moreover, mobile phone users were found to be interested in interacting with their health professionals through their phones for maintaining safety and responding to emergencies (47%), taking their medications appropriately (29%), monitoring vital signs (29%), and monitoring blood glucose (26%).

Apps for health

While it would be nearly impossible to accurately track the number of health apps available globally, the US Food and Drug Administration presented a report in 2012 that estimated 17 828 health and fitness apps and 14 558 medical apps were available.[4] In September 2012, the European Commission published a guide to 200

publically available health apps in 30 languages and 64 specializations, all rated by patients.[5]

Use of health apps by the general public and health consumers has both advantages and disadvantages. On the positive side, individuals are empowered to monitor themselves by tracking their heart rate, blood pressure, calorie intake, amount of sleep, weight, and other personal data. Having such data can improve the individual's ability to put health recommendations into a personal context. For example, monitoring might help an individual lose weight with an 1800-calorie, low-fat diet; exercise regularly to achieve a target heart rate for cardiovascular fitness; and obtain at least 7 hours of quality sleep every night. Collecting data with apps for health can also help individuals work with health professionals to set safe and reasonable goals, and can increase individuals' confidence when making lifestyle changes to achieve health-related goals. As well, individuals can share their personal results with loved ones and friends, thereby obtaining encouragement and support while working toward wellness.

On the down side, individuals may

not select appropriate apps for their use, or worse, may misuse the apps selected. For example, an app may not measure a particular aspect of health accurately and could thus mislead the user, or an individual may use an app to set too ambitious a goal (e.g., to lose too much weight too rapidly). Perhaps some individuals should not be encouraged to use apps at all, including those who worry excessively about their health, and those unwilling to confer with qualified health professionals able to validate app findings. Most individuals, however, should be encouraged to self-manage. If health professionals respond with indifference when asked about self-management, the individual could become dispirited and not persist in making health-related changes, or be dismayed enough to make changes without communicating further with any health professionals.

Recommendations for health professionals

The current abundance of health apps motivates many people to download and use these tools without any guidance from a health professional. Collaborative initiatives like Quantified Self (http://quantifiedself.com) create web-connected virtual communities where peers support each other in monitoring their own health and wellness through electronic means, with or without the involvement of health professionals. Meanwhile, many health professionals are unfamiliar with the popular health apps and are unable to support patients in their self-management, or keep track of specific apps to assess their advantages or disadvantages. For an optimal health outcome, health professionals and patients need to jointly identify and use the right apps. Health professionals can use the following strategies to gain knowledge of the growing number of apps and support their patients in using them:

• At the end of a clinical encounter with a patient who uses a smart phone, ask, "Do you use health apps, and if so, which ones and why?"

• Learn about one new app every month by asking patients to name an app that they particularly like and describe what that app has done for them.

• Try out an app on themselves and observe the effects.

• Once familiar with a few apps, advise those patients not using apps yet about one that might be useful to them.

• Make sure to follow up with patients using apps to find out how they are doing longitudinally and whether the apps continue to help or not.

• Share information about apps with other health professionals and see if they have apps they like, use themselves, or recommend to their patients.

Health professionals can also encourage their patients to use apps appropriately[6] by making the following suggestions:

• Commit to being an active health consumer by taking an interest in your own health, and going online to find at least one app that could help you maintain or improve your health.

• Learn to search and download health apps, starting with free ones, and building up a repertoire of health apps over time.

• Think of ways an app might help you improve your health: Do you

need to exercise more? Lose a few pounds? Know how your blood pressure and heart rate are doing or how well you are sleeping at night?
- Work with health professionals to ensure any app you use is safe, accurate, and suitable for you, and continue to consult with health professionals about the use of any app and how best to monitor your health.

The Health-e-Apps project

To promote the synergistic use of health apps by health professionals and health consumers, the University of British Columbia eHealth Strategy Office, with funding from the BC Ministry of Health, has developed the Health-e-Apps resource (www.ehealth.med.ubc.ca/resources/resourcesmobileapps).[7] The vision behind the project is threefold:
- To encourage health professionals to share useful health apps with the public and among themselves, and to provide specific recommendations for the use of these apps.
- To encourage health consumers to access health apps recommended by health professionals, and to share information about apps that they feel have been helpful to them in specific ways.
- To encourage health professionals and health consumers to communicate, exchange information about their experiences, and work together to build a collection of useful health apps, and to suggest ways to improve apps and share this knowledge with others.

Several popular apps are currently recommended on the Health-e-Apps page of the eHealth Strategy website, accompanied by short videos that introduce the apps and show how they can be used:
- A nutrition and exercise tracking app—My Fitness Pal (www.myfitnesspal.com).
- A heart rate tracking app—Heart Rate (www.azumio.com/apps/heart-rate).
- A quality of sleep tracker coupled with an alarm—Sleep Time (www.azumio.com/apps/sleep-time).
- A mood tracker—Mood Panda (www.moodpanda.com).

The health professional introducing these apps has tried and reviewed each app himself. He shares how he would recommend that these tools be used, and what benefits health consumers can expect. Neither the reviewer nor the eHealth Strategy Office has benefited financially in any way through making these recommendations.

Comments and feedback are sought from visitors to Health-e-Apps so their experiences with recommended apps can be shared with others. Over time, the eHealth Strategy Office hopes more health professionals and health consumers will participate in this initiative, build up the number of health apps reviewed, and write about their experiences using these apps.

Readers of this article are invited to visit the website and leave comments on the apps introduced. Those health professionals interested in sharing their experiences on health apps are also encouraged to contact the eHealth Strategy Office by e-mail at kendall.ho@ubc.ca, by Twitter at @eHealthStrategy, or by Facebook at UBC eHealth Strategy Office.
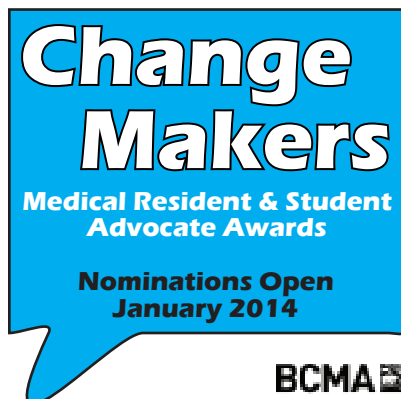
Summary

Health apps are fast becoming key tools for individuals wishing to track their own health. Health professionals need to acknowledge this trend, encourage patients who are moving toward self-management, and ensure patients use appropriate apps to manage their own health. By building a partnership between health professionals and health consumers, we can make better use of health apps as we strive for optimal wellness in our communities.

References

1. Canadian Wireless Telecommunications Association. Wireless phone subscribers in Canada, 2012. Accessed 22 August 2013. http://bit.ly/1d7Bl07.
2. European Travel Commission. New media trend watch. Canada. Accessed 22 August 2013. http://bit.ly/T1Jecw.
3. Ipsos.com. Close to half of Canadians now own a smartphone. 21 February 2013. Accessed 22 August 2013. http://bit.ly/14RkslE.
4. Sher DL. The FDA and medical apps: Where are we? The digital health corner. 5 November 2012. Accessed 22 August 2012. http://bit.ly/StAEoz.
5. Patient View. European directory of health apps 2012-2013: A review by patient groups and empowered consumers. Accessed 22 August 2013. http://bit.ly/177JNuC.
6. Ho K. Comment. Take charge of your health. Vancouver Sun. 26 September 2012. p. A13.
7. Shaw G. UBC's Health-e-Apps project helps patients help themselves. Vancouver Sun. 19 July 2013. Accessed 22 August 2013. http://bit.ly/15rxYyB.