

# Medical Applications for the iPhone

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**W**hen the iPhone first came out, it was popular due to its great design looks and innovative touch screen interface. The features in the first model were somewhat limited with regards to health professionals in that it only offered basic functions of playing music and videos, a calendar, Internet browsing, E-mail, and a contact manager. While the “id” craved the sexy design, which states “I am hip and who cares about cost,” the “superego” said the features do not justify the \$199 cost plus the \$30/month data plan over 2 years. With the second version of the iPhone3G (3rd generation wireless service), the “ego” now has the strength to mediate between the “id” and “superego” as this device provides many features to strike a balance.

## APPLICATIONS

The iPhone 3G took off in sales largely due to Apple opening up the application programming interface (API) for non-Apple developers to create applications for the iPhone. These third-party applications are easy to install via the iTunes App Store<sup>1</sup> and iTunes software on the computer, or they can be installed directly over the air using the App Store application on the iPhone itself via 3G Internet or wireless fidelity (Wi-Fi) connections. Although an iPhone is not going to replace the office computer, it is a very powerful bridge to access a wealth of health-related information.

The Safari browser in the iPhone is far superior to the Web browser in Windows Mobile and Blackberry smartphones. Although the majority of Web sites today incorporate Adobe Flash media, which is not supported by any smartphone, the iPhone provides the best and easiest browsing experience with its ability to zoom text quickly and to scroll easily. One of the easiest things to do with the Safari browser is to refill or start new prescriptions. As described in a previous “Tech Advisor,”<sup>2</sup> the Web browser-based electronic prescription system will run on

the iPhone. The benefit of using this system versus calling the pharmacy is that the running log of prescriptions generated is maintained and the dates of last prescriptions generated are easily available for review. Unfortunately, prescriptions that require tamper-proof paper cannot be filled in this manner.

Drug information is readily available for the iPhone. Epocrates<sup>3</sup> and Lexi-Drugs,<sup>4</sup> two of the most popular medication reference guides, are both available on the iPhone as an installed application in addition to their accessible Web-based versions. The advantage of having the data locally on the iPhone is particularly evident when there is neither 3G nor Wi-Fi signal available. These programs offer standard features such as drug dosages, formulary, drug interactions, and Food and Drug Administration indications, but also have a pill identifier and medical calculator. Epocrates offers additional content such as benzodiazepine equivalency tables and treatment guidelines.

There are numerous medical applications on the iPhone, some available for free and others requiring payment. Skyscape<sup>5</sup> offers many psychiatric textbooks from publishers, such as American Psychiatric Publishing Inc.,

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Lippincott, Williams, & Wilkins, Elsevier Health Sciences, and McGraw-Hill Companies, Inc. They also offer free resources such as Archimedes, another medical calculator; Outlines in Clinical Medicine, which has great notes on different topics such as QTc syndromes; and RxDrugs, a drug information guide. Stat ICD9 is available in both a lite (free) and full version, which provides *International Classification of Diseases*, Ninth Edition codes organized by system.<sup>6</sup> The company, StatCoder, also offers an E&M coder to help determine the appropriate evaluation and management billing code. BMIApp is a free body mass index calculator, which can calculate in either inches/pounds or centimeter/kilogram.<sup>7</sup> Continuing Medical Education (CME) is also available via the ReachMD CME application.<sup>8</sup> These modules typically come in quarter- and half-hour increments on a variety of topics. After listening to the lecture audio stream, credits are granted once the test questions on the iPhone have been answered. These are just a sampling of >300 medical applications available for the iPhone.

In addition to specific medical applications, numerous general iPhone applications are very handy. VoiceBox Dialer<sup>9</sup> is an application that helps dial contacts without typing, by merely saying, for example, “call Mary Smith on her mobile.” ReQall is another voice-enabled application that serves as an organizer and personal assistant.<sup>10</sup> When reminders are spoken into the application, it is then converted into text. This text is analyzed and then converted into notes, shopping, to-dos, and event dates. Quick Voice<sup>11</sup> works similarly but it stores the voice note into various categories and can send them as voice E-mail. Evernote<sup>12</sup> handles voices, snapshots, and text notes and synchronizes them via the Internet with the personal computer. It can automatically tag text in snapshots, which makes those snapshots searchable. Voxie<sup>13</sup> is a voice recorder that also synchronizes with the computer but can be sent to a medical transcriber to convert the file to text. JMDictate is another dictation application, which is popular with physicians since it has a rewind button which permits backing up and restarting.<sup>14</sup>

## REMOTE ACCESS

The iPhone is not just a mobile device, but can also be a portal to a clinician’s office. The LifeRecord Electronic Medical Record system<sup>14</sup>—a Web-based electronic medical record (EMR)—is optimized for the iPhone screen and interface. Access is not limited to viewing since one can add and edit patient records, issue prescriptions, and review images from the iPhone. eClinicalWorks<sup>15</sup> is another Web-based EMR that plans to offer iPhone optimization as well.

The Care360 Physician Portal<sup>16</sup> is a mobile application from Quest Diagnostics which gives access to lab results, reviews medication history, writes prescriptions, and views patient problem lists and allergies.

If the office has a desktop-based EMR there are many ways to access the office computer via the iPhone. Virtual network computing (VNC) software enables the iPhone to see the desktop screen of the remote office computer and control it with the iPhone. The server software needs to be installed on the host computer and the right client software needs to be installed on the iPhone. On a Macintosh, the VNC server is already installed, and the Mocha VNC client<sup>17</sup> for the iPhone is easy to use. Computers with Microsoft Windows or Linux can be installed with TightVNC,<sup>18</sup> a free version of the VNC software. One of the hurdles of implementing this VNC software solution is that the software must communicate via a “port” on the desktop computer’s network connection. Wireless routers often have a firewall, which is a software or hardware security measure, setup to block certain ports and thereby prevent unauthorized access to the network. These ports must be “opened” on the firewall to allow the VNC software to work.

To avoid such configuration complications, one may use LogMeIn,<sup>19</sup> a remote desktop program that is easier to install. This setup is simplified because the routing goes through ports that are already open for the Web browser. Once the server software is installed on the host office computer, a remote computer only needs to have Internet access and a Web browser to then access and control the host computer. LogMeIn offers an iPhone application called Ignition, which costs \$29.99, to provide mobile access.

If the office records are not specific electronic health record software, but basic document files, Dropbox,<sup>20</sup> Box.net,<sup>21</sup> and SugarSync<sup>22</sup> provide remote file viewing access via the iPhone. Once installed, the software for these services remotely duplicates files from the computer onto the server. This provides an online backup and file access solution. An advantage of using Dropbox and SugarSync is that more than one computer can be connected to the account and, therefore, all of the same files will be synchronized among the computers. To address Health Insurance Portability and Accountability Act issues, these files are all transmitted over the Internet via secure socket layer and are stored on the server with encryption. SugarSync and Box.net have specific iPhone applications which are used to access these files. Once these Adobe PDFs and Microsoft Word documents are opened, the iPhone already has the ability to view them without any conversion. Dropbox does not have an iPhone application, but its site is optimized for the iPhone when accessed via the Safari browser.

## FUTURE

Although these applications and services in the second version of the iPhone are quite good, Apple has indicated that the next software version 3.0 will have new features.<sup>24</sup> These include copy-and-paste of text and improved search of E-mail and other areas on the iPhone. Microsoft has been rumored to offer a mobile version of Office for the iPhone in the near future, which will allow users to edit their office files.<sup>25</sup> Unfortunately, Apple has yet to provide an API to permit Bluetooth keyboards to be used with the iPhone. In addition, although the iPhone can display video on an external monitor from its iPod video collection, it cannot duplicate the iPhone screen while in an application, which hinders its use as a miniature computer.

## CONCLUSION

Today's physician often needs access to records or files while at multiple locations throughout the week. The Apple iPhone extends access to information and ability to continue practicing medicine anywhere and anytime without a high burden of cost. Although going into psychoanalysis is not necessary to make a decision on whether to purchase an iPhone, hopefully reading this column has improved the "ego strength" to make that decision. **PP**

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