

Mobile Health: The Newest Wave of Healthcare IT

The healthcare industry is increasingly employing technology to: deliver innovative care; track outcomes; improve quality; and, reduce costs. This trend can partly be attributed to requirements imposed on providers by the *Patient Protection and Affordable Care Act (ACA)*, such as the adoption of electronic health records (EHR) and the achievement of “*meaningful use*.”¹ In other areas, however, this “*mobile health*” trend is being used to improve patient compliance, extend access to rural areas, and provide physicians and patients with convenient alternatives to the traditional office visit.² Though some concerns exist, this new form of care is likely to change the U.S. healthcare delivery system and effect significant cost savings in coming years.

Mobile technology is currently being utilized across the world, in a variety of ways. Developing countries are employing this technology to target public health issues, e.g., to improve the records management and reporting of HIV/AIDS cases in Kenya, or to send medication reminders via text message to tuberculosis patients in South Africa.³ In rural China, physicians are using mobile devices that provide access to EHR and treatment databases, as well as allow them to consult with specialists in urban areas when needed.⁴ Other countries are using devices and applications to track clinical data for individual patients; schedule appointments; read test results; and, respond to patient questions.⁵ This alternative method of healthcare delivery may be especially promising for the management of chronic diseases, e.g., diabetes, as remote devices allow patients to remain in the convenience of their homes for testing, while delivering real-time results to physicians so that problems may be identified early.⁶

Along with increased access and convenience, mobile health also carries significant potential for cost savings and quality improvement. One economic study predicted that the use of remote monitoring technologies in the U.S. could achieve approximately \$197 billion in savings over 25 years, and another estimate predicted the field of mobile health would boost North American economies by \$6.5 billion.⁷ However, physician reimbursement has not kept pace with the technology, as policies still reflect a preference for face-to-face medical

treatment, and many of the functions that physicians perform with mobile technology are not currently reimbursed by payors.⁸ Studies on the adoption of mobile health technologies for reading electrocardiographs or computerized tomography (CT) scans revealed that: (1) physicians who used mobile devices read medical test results more promptly; (2) fewer medication prescribing and hospital discharge errors occurred; and, (3) physicians demonstrated better performance in data management and record-keeping.⁹ Other research has shown that the use of mobile health can: double the access to physicians for rural patients; improve patient compliance with tuberculosis treatment by 30 percent or more; and, lower the costs of medical care for elderly patients by 25 percent.¹⁰

Recently, a greater number of patients and providers are exploring the use of mobile technologies. There are more than 12,000 mobile health applications available on Apple iTunes alone, and estimates suggest that 247 million people worldwide have downloaded at least one mobile health application.¹¹ However, the use of mobile health technology by physicians may present some complications. For example physicians may use their personal mobile devices for patient care-related functions, which can raise concerns about privacy and quality.

Additionally, the trend, labeled as “*BYOD*” for “*Bring Your Own Device*,” has sparked controversy because some healthcare organizations have not taken action to coordinate the use of these devices or set clear policies on their use, yet many physicians are already using their personal devices in hospitals.¹² Recent incidents of physician device theft underscore the need for additional security to protect against patient information breaches and ensure compliance with the *Health Insurance Portability and Accountability Act (HIPAA)*.¹³ For physicians who interpret imaging tests, there are concerns that a device’s screen resolution may be inadequate and could compromise the accuracy of a diagnosis.¹⁴ The Food and Drug Administration (FDA) responded to this concern by issuing draft guidelines in 2011, and the agency announced in early 2012 that it would be evaluating a number of aspects of mobile health more closely.¹⁵

Although mobile health presents some issues related to reimbursement, privacy, and quality, the potential benefits it offers may be significant. As technologies develop, providers who utilize mobile health may realize improvements in access, quality, and cost. Further, with greater adoption by the healthcare industry, payors and regulators may be forced to adapt policies accordingly.

- 1 For more discussion on EHR and “meaningful use,” see the HC Topics September 2012 article: [Stage 2 Meaningful Use: What’s Coming Down the Pike](#).
- 2 “How Mobile Devices Are Transforming Healthcare” By Darrell West, *Issues in Technology Innovation*, No. 18, May 2012, p. 3, 6, 7.
- 3 *Ibid.*, p. 4,5.
- 4 *Ibid.*, p. 7.
- 5 *Ibid.*, p. 5.
- 6 *Ibid.*
- 7 “Vital Signs Via Broadband: Remote Health Monitoring Transmits Savings, Enhances Lives” By Robert E. Litan, *Better Healthcare Together*, October 24, 2008, p. 2; “Touching Lives Through Mobil

- Health: Assessment of the Global Market Opportunity” By Siddharth Vishwanath, et al., India: PricewaterhouseCoopers Private Limited (PwCPL), February 2012, p. 5.
- 8 West, Darrell, May 2012, p. 8.
- 9 *Ibid.*, p. 5.
- 10 *Ibid.*, p. 8.
- 11 *Ibid.*, p. 6.
- 12 “BYOD Security Tops Doctors’ Mobile Device Worries” By Michelle McNickle, *InformationWeek*, October 31, 2012, <http://www.informationweek.com/healthcare/mobile-wireless/byod-security-tops-doctors-mobile-device/240012626> (Accessed 12/20/12); “A Smarter Way to Use Mobile Devices in Healthcare” By Mac McMillan, *Executive Insight*, December 4, 2012, <http://healthcare-executive-insight.advancweb.com/Features/Articles/A-Smarter-Way-to-Use-Mobile-Devices-in-Healthcare.aspx> (Access 12/20/12).
- 13 “A Smarter Way to Use Mobile Devices in Healthcare” By Mac McMillan, *Executive Insight*, December 4, 2012, <http://healthcare-executive-insight.advancweb.com/Features/Articles/A-Smarter-Way-to-Use-Mobile-Devices-in-Healthcare.aspx> (Access 12/20/12).
- 14 Michelle McNickle, October 31, 2012).
- 15 West, Darrell, May 2012, p. 39.



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