

Information Technology and the Clinical Nurse Specialist

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The Use of Smartphones in Hospitals

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SMARTPHONES IN HOSPITALS

The purpose of this column was to describe trends in smartphone use within hospitals and implications for the clinical nurse specialist (CNS). First, however, it is important to describe what is meant by “smartphone.” At this time, there is no industry standard definition for a smartphone. However, smartphones do share key features such as an operating system (making it possible to use a variety of software applications, more commonly known as apps), access to e-mail accounts, an electronic calendar, and, of course, the ability to make and receive phone calls. In essence, smartphones combine features that were previously available on personal digital assistants with the use of a phone. Smartphones include iPhones and Blackberry devices as well as those running Android, Windows, or Palm operating systems.

The reason that use of smartphones is becoming important in healthcare is related to the large penetration of use within American society. The Pew Research Center’s Internet and American Life Project recently released a report indicating that 35% of American adults own a smartphone.¹ A few demographic groups reported a higher-than-average use of smartphones. These include (1) those earning more than \$75 000 annually and those with a college degree, (2) those younger than 45 years, and (3) African Americans and Latinos. Furthermore, in another study conducted by Manhattan Research, it was noted that 81% of physicians are using smartphones.²

Given the growing use of smartphones in American society, how might this mobile computing potential be used advantageously within hospitals? Amcon software recently released a white paper describing 10 predictions

for 2012 on smartphones in hospitals.³ Those predictions and implications for the CNS will follow.

■ Prediction 1: Hospitals will start doing even smarter things with smartphones to make them an essential party of everyday healthcare communications. There are several examples of how smartphones can be used to enhance messaging capabilities with a potential to enhance the quality of patient care. The ability to send encrypted critical messaging could facilitate consult requests, code calls, and reports of abnormal laboratory results. The ability to link to Web-based on-call schedules can ensure finding the appropriate provider at the right time. Finally, integration with nurse call systems and patient device monitoring may enhance timeliness of care. Clearly, this feature may be important to the CNS in obtaining referrals for patient education and notifications of pending patient discharge.

At the Centers for Medicare & Medicaid Services QualityNet Conference, 3 winning health apps designed for “Ensuring Safe Transitions From Hospital to Home” were awarded.⁴ This effort, part of the Office of the National Coordinator’s Investing in Innovation program, requested app designs to facilitate transitions from hospital to home, nursing home, or hospice. Once again, the CNS is well versed in care transition issues and may be able to lend that expertise to the development of appropriate mobile applications.

■ Prediction 2: An incident involving compromised protected health information (PHI) on a smartphone will cause headlines and fines. The Centers for Medicare & Medicaid Services has the authority to enforce the security rules associated with the Health Insurance Portability and Accountability Act of 1996. They have issued guidance concerning security for electronic protected health information, which they refer to as EPHI.⁵ In essence, they recommend performing a risk analysis and developing risk management strategies, developing policies and procedures for safeguarding EPHI, and providing security awareness and training

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on the policies and procedures for safeguarding EPHI. These policies are particularly important if EPHI is accessed from a smartphone and stored on the device for any length of time. It is important for the CNS to serve a patient advocacy role in discussions concerning the enhanced use of smartphones and to ensure that patient data remain secure.

- Prediction 3: The proliferation of different mobile communication devices gets worse. There are already a variety of devices available within hospitals. Many allow for use of tablet devices or laptops as a mechanism to gain entry to the electronic health record. In addition, there are a number of communication devices such as phones, pagers, and wi-fi phones in use. Although a communications or information technology department coordinates the requirements of various devices, it is important for the CNS to be involved in discussions about how technologies may facilitate workflow and enhance patient care.
- Prediction 4: Traceability becomes a requirement, not a luxury. One advantage to the use of smartphones is that the origin and receipt of calls can be traced and therefore audited. This feature does not currently exist with pagers, and it is often difficult to confirm whether a page was received. For the CNS, this feature is important in documenting communication concerning an untoward event or near miss. It facilitates the examination of communication flows and may facilitate development of systems solutions.
- Prediction 5: The predication of the death of pagers will be proved wrong. Even though the number of smartphone users has increased, in times of disaster a pager is still a more reliable form of communication than is a smartphone. This is due to the fact that during a disaster, cellular networks tend to get overwhelmed and shut down. Pagers remain a reliable and relatively inexpensive option for communication during a disaster.
- Prediction 6: Specialized communication hardware devices will fail to gain traction. Some manufacturers are attempting to market enhanced pagers that support messaging functions. Unfortunately, those devices do not offer much beyond a typical pager, and many within hospitals already have smartphones. Thus, it appears that specialized devices will not gain market share.
- Prediction 7: Web out, apps in. Smartphone users are more likely to use apps that browse the Internet when looking for a communications or data entry solution. As the United States has moved toward development of a national health information technology infrastructure, over 1500 mobile medical applications have been developed to assist both patients and their clinicians in managing care.⁶ The growing use of these applications as well as the potential risks they may

pose to public health prompted the US Food and Drug Administration to issue draft guidance concerning the regulation of mobile medical applications in July 2011.⁷ As the guidance is currently written, apps that serve as a reference for care (eg, drug manuals) are exempt from regulation. Those that provide drug dose calculation will likely require a higher level of scrutiny. It is important for the CNS to learn about the kinds of apps available to support patient care in his/her area of specialty as well as to understand the regulatory environment associated with those apps.

- Prediction 8: Hospitals raise the “now what?” question with tablets. The key implication for this prediction is that hospitals have not been able to successfully incorporate tablets into an overall communications plan. Especially with the availability and portability of smartphones, the use of tablets within hospitals has not been heartily embraced. The CNS may serve as a point of influence concerning which mobile technology to adopt. When considering the aging of the nursing workforce, the larger screen of a tablet may be a more appropriate solution than a smartphone.
- Prediction 9: Hospitals will deliver comprehensive mobile strategies. While mobile communication strategies have not been formalized in many institutions, this provides the CNS with the opportunity to join a task force concerning mobile communications and provide input on policies concerning data security and message traceability.
- Prediction 10: Information technology and biomedical engineering will join forces in the name of improved workflows. If new communication patterns can improve workflows, they can likely improve the quality of patient care. The CNS is ideally positioned to not only participate in quality improvement initiatives involving improved communication but also evaluate outcomes of those initiatives.

The smartphone market penetration will continue to expand over the next several years. It is important for CNSs to understand how smartphones can be part of an overall communication plan as well as how the variety of apps available can assist healthcare providers in their daily work. As smartphones are evaluated for use in hospitals, the CNS can play an important role in determining how they can best be used to support the many complexities associated with patient care in a complex environment.

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