DETERMINATION OF SOFTWARE AND HARDWARE REQUIREMENT SPECIFICATIONS FOR USE OF TABLET COMPUTERS IN AN ANESTHESIA RESIDENCY PROGRAM

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Introduction: Electronic tablet computers are being used increasingly in anesthesia residency programs, especially in the areas of education and patient care. However, there is no consensus on how best to deploy these devices. While personal tablet setup is easy, there are challenges for deployment in secure enterprise network environments. We analyzed hospital information system and security requirements for use of such devices prior to implementation in our program.

Methods: We determined software/hardware requirements specifications for the tablet program covering: 1) acceptable tablet devices; 2) wireless network access; 3) privacy and security concerns; 4) printing; 5) mobile device management; 6) device purchase; 7) user issues.

Results:
1. Tablet Devices: because of anticipated difficulty in supporting the many versions of Android and varying devices, access to the network is currently restricted to iOS devices.
2. Wireless Access: because access to the hospital’s internal wireless network is tightly controlled, individual logon and password management though the active directory is required. Devices need to be able to roam seamlessly among wireless access points without dropping sessions.
3. Privacy and Security: because of concern about potential transmission of protected health information to uncontrolled third party servers, and ambiguous policies related to vendor access/use of uploaded data, iCloud services and other public file sharing services (e.g., Dropbox) are forbidden.
4. Printing: printing from the iPad to network printers is not currently possible due to the configuration of the network and limitations of Apple network printing protocols.
5. Mobile device management software: there is a requirement to be able to centrally manage, register, secure, and track the devices and send push notifications, policies, and updates to the devices.
6. Device purchase and financial responsibility: personal computing devices are not currently allowed on the internal network, so tablets had to be institutional purchases. 7. Use Issues: a sample of incoming residents indicated they would prefer a real keyboard rather than having to rely on typing on screen residents indicated they would prefer a real keyboard rather than having to rely on typing on screen.
Discussion:
Based on hospital requirements, we purchased 17 iPads for pilot use by our incoming CA-1 class and 3 for shared use. Each resident obtained an Apple ID under which software was installed (thus allowing updates). MobileIron device management software was installed, allowing distribution of security certificates permitting trusted access to the wireless network. Combination keyboard cases and capacitance styluses were provided. The program is funded from each resident’s book account, and residents are responsible for lost equipment. A satisfactory wireless printing solution is still under investigation. We preloaded selected anesthesia-related applications and shortcuts to important hospital and anesthesia department websites. (Figure) There are many approaches to the deployment of tablet devices, and we make no claims that ours is optimal. However, we recommend a formal assessment of requirement specifications in conjunction with hospital information systems network and security staff when planning the deployment of tablet devices to residents.