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Providence Centralia Uses RTLS to Track Electronic Charts

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The hospital is employing a Wi-Fi-based system so it can locate table PCs containing the electronic health records of individual patients.

By Beth Bacheldor

Jan, 23, 2008—Providence Centralia Hospital, a rural hospital servicing Lewis County and surrounding areas in the state of Washington, is using a Wi-Fi-based real-time location system (RTLS) to track the critical tablet PCs its clinicians use to access patient data and associated applications from anywhere on the hospital grounds.

Providence Centralia, part of the 27-hospital Providence Health & Services (PH&S) system operating in Alaska, Washington, Montana, Oregon and California, is employing an RTLS from AeroScout, based in San Mateo, Calif. The system leverages the hospital's existing IT infrastructure and network investments, including its medical-grade wireless network designed by Motion Computing and consisting of Cisco Wi-Fi network access points. World Wide Technology served as the systems integrator for the initiative, which went live in October 2007.

Providence Centralia's RTLS implementation is not currently using AeroScout's active 2.4 GHz RFID tags or exciters (which activate the tags, causing them to transmit their identification numbers), because the tablet PCs have Wi-Fi network access cards. The AeroScout Engine calculates the devices' locations by processing signals from their Wi-Fi cards. The AeroScout Engine then shares that data with AeroScout's MobileView software, which can portray location information on a map, in a table or in a report.

The hospital decided to implement the RTLS as a security measure, and to make it easier for the hospital staff to locate the PC tablets. "Critical assets such as [these PC tablets] are vulnerable to theft," says Curt Kwak, Providence Centralia's director of IT infrastructure services. "And Providence decided that the internal encryption policy alone will not protect [the tablets]." Using the RTLS, he says, the hospital can check where the tablets are located at any given time, to help ensure they remain on the premises.

Equally important, Kwak says, the hospital wanted to be able to locate the tablets in real time, and to make it easier for clinicians to track them. Although each PC is assigned to a specific room, where it has its own docking station and is used to record and display the health records of a patient in that room, it can be moved to different areas as the clinicians treat that person. According to Kwak, the tablets are part of an overall electronic health record (EHR) initiative the hospital has undertaken to reduce and eliminate paper, maintain access to real-time patient data and serve patients more quickly and accurately, compared with the use of paper-based charts.

"Knowing where the devices are in real time allows the clinicians to access their patient information quicker and in a more accurate way," Kwak explains. That's because doctors and nurses can access the RTLS to locate the tablets, rather than manually search for them. And because each PC is used to

treat an individual patient, displaying health records in real-time at the point of care, clinicians are getting correct information about the right patient at the proper time.

The hospital is tracking 140 tablet PCs thus far, but plans to track more in the future. Within the next few months, PH&S intends to install the RTLS and use it to track tablet PCs at Providence Everett Medical Center in Everett, Wash., and Providence St. Peter Hospital in Olympia, Wash.

In a second phase of the implementation, which PH&S is expected to begin later this year, the hospital will attach AeroScout active Wi-Fi tags to wheelchairs, IV pumps and poles, beds and other equipment so it can utilize the RTLS to track these assets. The health-care organization is also evaluating the use of the AeroScout RTLS for patient tracking, though no specific plans have yet been made.