

**The University of Maryland Medical Center's radiation oncology department is attaching a Wi-Fi-based active tag to each of its patient files, enabling it to find charts quickly.**

By Beth Bacheldor

Dec. 18, 2007—The [University of Maryland Medical Center](#) in Baltimore has implemented a Wi-Fi-based, active RFID real-time location system (RTLS). The system will ultimately enable the hospital to track about 600 patient charts in its radiation oncology department, which provides radiation therapies to help fight cancer, as the files circulate within the building and across the entire downtown campus.

The RTLS includes 2.4 GHz active, Wi-Fi-enabled tags from [InnerWireless](#), [Cisco](#) Wireless Location Appliances and InnerWireless' PanGo Locator software, a Web-based asset-tracking application that provides detailed map and table views of the tagged assets and their locations, with drill-down and search capabilities, among other features.

The tags measure about 2 inches by 2 inches, says John Kornak, project manager for the medical center's information technology group, and are being affixed via Velcro to the inside middle of each three-ring hardcover binder used by the radiation oncology department to carry individual patients' charts. Each tag is oriented within the binder so that the antenna is pointed upward, Kornak says, "to make sure we get the best, clearest signal." So far, the department has tagged about 300 patient files.

The hospital decided to use the asset-tracking system to make it easier for medical records staff, nurses and doctors to find a particular patient's chart—which can be moved several times a day within the department and elsewhere at the medical center—when that person comes in for treatment. Electronic medical records (EMRs), which are digital versions of patient charts, are not yet an option for the radiation oncology department, because the medical records system the hospital employs does not yet have an EMR module for radiation oncology.

Radiation oncology has treatment codes and other elements necessitating the use of a specialized EMR. According to Kornak, the main vendors providing medical records software do not yet offer EMR software modules for radiation oncology, but they do offer versions designed for other specialties. "They just haven't built those modules," he explains, "so our radiation oncology department still does it all on paper."

The hospital first tested the RTLS for two months about a year ago, and began the implementation in March. The system operates in any site within range of the hospital's network of Wi-Fi access points, including rooms where radiation is administered, the control rooms just outside the treatment rooms, a waiting room and the nurses' station. The tags can also be tracked throughout the campus, which is covered by the same Wi-Fi network. There are some pockets where tracking can't be conducted, mainly because there are currently not enough access points to provide full coverage.

"The radiation oncology department is 27,870 square feet," says Kornak. "When the hospital deployed the hospital wireless system, originally real-time tracking was not a thought, and the survey that was done then for the system was done strictly for voice and data coverage. When we did the pilot a year ago, we were told that there would be some pockets because there weren't enough access points, and it was suggested that we move some [access points] and add some." However, he says, that will require additional funds, which won't be available until the hospital's 2009 budget takes effect in July of next year.

A binder's asset tag is reusable, but is not removed and reused until a patient has completed treatment and the records are removed from the hardcover binder, placed in a soft-cover binder and stored in the medical records office.

Kornak says "buzz" about the radiation oncology department's RTLS has resulted in other departments asking for the technology to track equipment they use, including patient monitors, infusion pumps, PCs, wheelchairs and bed frames. "There's a lot of hospital-wide interest," Kornak states, adding that new pilots and implementations will be assessed on a case-by-case basis.