

**A real-time location system combining CenTrak hardware and PeriOptimum software has raised the utilization rate of the facility's 16 operating rooms by 23 percent.**

By Claire Swedberg

Feb. 26, 2010—At [Grady Health System](#), a health-care provider in the greater Atlanta area, a real-time location system (RTLS) installed one year ago has improved the utilization rate of the hospital's 16 operating rooms by 23 percent.

The RTLS, provided by [CenTrak](#) and [PeriOptimum](#), informs Grady Health System's surgical department of each patient's status as he or she proceeds through surgical procedures—when that patient enters an OR, when the various processes carried out in that room are complete, and how quickly that individual continues through recovery. The hospital uses that information to provide updates regarding the patient's status to staff and family members, explains Ari Naim, CenTrak's president and CEO, and to improve its own processes by identifying bottlenecks in the surgery department.

The company's InTouchCare system features battery-powered 900 MHz RFID tags that receive infrared signals from transmitters and sensors to determine a person's room-level location. The tags then transmit their ID numbers and location information to RFID interrogators, which forward that data to the hospital's back-end system.

The surgical services department, according to Hakan M. Ilkin, Grady Health System's director of process improvement, is a complicated environment, "with changes on a minute-by-minute basis." Patients pass through many stages as they go through surgery, including anesthesia, the operation itself, post-surgery and recovery. Within each category are numerous subcategories, such as when cutting first begins, as opposed to suturing. When a patient is moved from one area to another, there can sometimes be a delay as the appropriate employees are summoned to prepare that room for the next patient.

Initially, Ilkin says, Grady Health System installed the system to answer the most basic question: "Where is the patient?" Beyond that, however, the facility sought greater understanding of its efficiencies and areas that needed improvement. The hospital wanted to know not only the patient's location, but also what step he or she was at in the surgical process, as well as how long it took to prepare a room for the next patient. By knowing at what stage a patient is, the hospital can alert its staff as to the next phase, and when it will begin. For example, orderlies are informed when they can clear an operating room, or assist a patient moving to another area, and the housekeeping staff can then clean the room and prepare it for the next patient. Grady installed the system in December, 2008.

The CenTrak system comes with an IR-RFID tag that is clipped onto a patient's intravenous (IV) pole as he or she enters the surgical department and is first administered the IV. Workers enter that tag's ID number into RealView perioperative RTLS software provided by PeriOptimum, thereby linking the patient to that tag throughout his or her time at the hospital. The tag comes with three buttons. In each

location, the buttons correspond with different stages of procedure—in surgery, for instance, the stages may include beginning surgical cutting, suturing and preparing to be sent to recovery.

Each OR has an infrared transmitter that emits a unique ID number. When a tag enters a room and detects an IR transmission, it captures that ID number and then transmits a 900 MHz RFID signal with the ID numbers of the emitter and the tag to one of approximately 40 RFID monitors installed throughout the department. The reader data is sent to a back-end server, where PeriOptimum software captures that information and interprets it, then makes it available to view on PCs, as well as on eight large-screen monitors installed in key areas throughout the department, at which staff members and visitors can keep an eye on a particular patient's progress.

Initially, the hospital has been utilizing 100 tags for patients. "We have been able to gather data and use it to do performance improvement in bottlenecks," Ilkin states. For example, he says, the daytime utilization of the operating rooms is now at 80 percent—up from 65 percent, before the system was installed. (That figure indicates the percentage of time that an OR is being used by a patient, as opposed to being cleaned or awaiting another procedure.) "We're very happy with the progress we've had."

Over the next few weeks, the hospital indicates, it intends to begin using the same types of tags for asset tracking.