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Texas Health Harris Methodist Hospital Finds RTLS Provides Many Benefits

Approximately six months ago, when the newly constructed Texas Health Harris Methodist Hospital Alliance (Texas Health Alliance), in Fort Worth, Texas, opened its doors for the

first time, it already had a real-time location system (RTLS) up and running. Its goal was to improve efficiency, regulatory compliance, and patient satisfaction and care.

The RTLS solution employs CenTrak's Gen2IR tags and readers to identify the locations of assets, patients and personnel, as well as Intelligent InSites software for managing the collected location data. To date, the RTLS has ensured that no asset has ended up missing. What's more, says Winjie Tang Miao, Texas Health Alliance's president, patient satisfaction is high—due, in part, to the RTLS solution freeing up employees' time.



Texas
Health
Alliance
's
Winjie
Tang
Miao

Texas Health Presbyterian Hospital Dallas (Texas Health Dallas)—one of Texas Health Alliance's sister hospitals—had already been using Intelligent InSites' software and CenTrak's RTLS hardware, Miao says. As such, Texas Health Alliance's parent company, Texas Health Resources, opted to install a similar RTLS solution at the Fort Worth site, while the hospital was still under construction.

The solution includes tags attached to mobile high-value assets, tags attached to patient wristbands, and badges that staff members wear while moving about the facility. The system also utilizes CenTrak's Gen2IR infrared emitters to identify room-level location data.

The Texas Health Alliance hospital has 58 inpatient beds and 15 more in the ER, which treats approximately 70 to 80 patients daily. The solution's greatest benefit, Miao reports, is that it helps workers locate assets quickly, thereby enabling them to spend more time serving patients. In addition, the patient-tracking function makes it possible to automate the discharge process, as well as find patients for friends and family, while the personnel-tracking capability enables the system to identify which staff members have been within the vicinity of an infectious patient.

Texas Health Alliance attached Gen2IR asset tags to assets, including rental equipment and permanent inventory, and installed RFID receivers to receive tag transmissions. It also installed Gen2IR emitters within each patient room, as well as in operating suites, hallways, public areas and emergency rooms. The emitters beacon an infrared signal with a unique identifier throughout the hospital, explains Marcus Ruark, Intelligent InSites' VP. The tag receives the emitter's signal and transmits its own ID, as well as that of the emitter, to an RFID reader via a 900 MHz signal. The real-time location data is then processed by Intelligent InSites software, which interprets that tag's location, based on data culled from the reader.

To ensure that assets are available to personnel when needed, the hospital has a "mission control" department that is responsible for not only the transportation of patients, but also equipment's location and readiness. That department, which Miao likens to a logistics hub, has set periodic automatic replenishment (PAR) levels for equipment, according to the medical staff's needs. Each morning, members of the mission control staff log into the Intelligent InSites software and determine how many cleaned pieces of equipment are at each location. The department then sends employees to move equipment as needed, in order to ensure that the items can be found and used quickly.

When a pump or other piece of medical equipment is moved into a section of the hospital for cleaning, the software knows where that object is situated, as well as where (and with whom) it was most recently located. For example, if it was with a patient and was then relocated to the cleaning area, the software interprets that action as the “equipment being cleaned following use on a patient.” When it leaves that cleaning location, the status is updated to “cleaned and ready for reuse.” If the item was with a patient but was not then moved to the cleaning area, the software can also issue alerts that the equipment requires cleaning.

Staff members searching for a particular item can access the Intelligent InSites Web-based portal. After inputting the type of equipment being sought, they can view icons representing those assets and their locations. The icons are color-coded to indicate equipment that is not in use by a patient, but is cleaned and available, as opposed to items being used or cleaned.

Each new patient at the hospital receives an ID wristband with an ID number printed on it. A Gen2IR patient tag is then attached to that wristband, and the location data is used to help locate patients for their family members and friends. For example, if a visitor wants to know where her grandmother is, a staff member can simply access the Intelligent InSites software to view where that patient is and how long she has remained at that location. That information can be valuable, Miao explains, since it helps personnel determine when a patient may return to her patient room. For example, if she has been slated to undergo imaging, and has only been in that area for five minutes, the staff can inform family members that the process may still take another half-hour, giving them time to step away from the room until she returns.

The patient tags also aid Texas Health Alliance with its discharge process. When a patient is checked out of the

hospital, his or her wristband is removed and placed in a "discharge bin," which comes equipped with a CenTrak reader. After interrogating the tag's unique ID number, the reader forwards that information to the Intelligent InSites software, which then notifies the housekeeping department that the patient's room is empty and available for cleaning. Once cleaning is complete, a housekeeper places a phone call to the staff dedicated to patient room assignments. During the next implementation phase, Miao says, the housekeeping staff will only need to exit a patient's room, thereby signaling to the RTLS software that the room is now cleaned and ready for the next occupant.

Each staff member also carries an RTLS staff tag that transmits his or her location as that individual moves around the hospital. Currently, Texas Health Alliance is using this data to manage potential exposure to infectious illnesses. If a patient is found to have a communicable disease, such as tuberculosis, management can access the Intelligent InSites software and view the badge ID numbers of all personnel who have been within the vicinity of that patient. They can then contact each worker and ask him or her to report to the staff health department for evaluation. According to Miao, this makes the identification of potentially infected employees much easier and more accurate than relying on a manual method of sending an e-mail to the entire staff, asking them to recall whether they had been in contact with a particular patient.

The hospital's IT department is still working with Intelligent InSites to identify other ways in which the RTLS data could be used, Miao says. The technology could, for instance, ensure that patient requests are met. For example, if a patient asked for a pillow, a nurse could input a request in her nurse call system. The RTLS solution could then track how quickly the nurse returned to that patient's room. If distracted by other, more pressing requests, the nurse might not remember to return

with a pillow. In that case, the system could issue an alert to management after 10 minutes, indicating that the patient had not had his pillow delivered, and thus allowing someone else to address the problem.

“The system is working very well overall,” Miao says. Because the system was taken live at a new hospital, there are no previous efficiency- or satisfaction-based statistics against which to compare the results. However, she notes, Texas Health Resources has noticed measurable improvement in operational efficiency at Texas Health Dallas.

Regarding Texas Health Alliance’s RTLS deployment, Miao states, “Our greatest benefit, in my opinion, is the way we are using the tool to automate non-value-added tasks, [such as] keeping real-time PAR values on highly utilized patient equipment and having alerts sent when that PAR has been compromised so it can be dealt with. If you look at patient satisfaction, our scores are very high. I think part of the reason is we have great nurses and great staff, but I also think the nurses aren’t running around searching for stuff, and therefore, they’re free to be at the patient’s bedside.”



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