# ISHE

## INDIANA SOCIETY FOR HEALTHCARE ENGINEERING

# ISHE Issues

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# Case Study

## RTLS Helps WakeMed Cary Hospital Cut Equipment Rentals 20 Percent

### Summary

*WakeMed Cary Hospital cut equipment rentals by 20%, reduced purchases of IV pumps and accelerated deployment of clean equipment to patient care areas. Nurses and clinical engineers became leading advocates for the system because of the time it saved them.*

### Issues

As hospitals recognize that health information technology can improve operating efficiency and patient care, asset tracking has emerged as an important solution to save money and time that could be better spent caring for patients. However, with so many Real Time Locationing Systems (RTLS) manufacturers moving from other industries into the healthcare category, choosing the right vendor is a complex process.

WakeMed Health & Hospitals, a two-hospital system based in Raleigh, N.C., sought an asset tracking solution for its WakeMed Cary Hospital that enabled staff to quickly locate medical equipment and monitor usage to make more intelligent business decisions about future equipment rentals and purchases. In addition, WakeMed required a technology that would maximize benefits to patients and staff with minimal interference to daily hospital procedures and patient care.

### Solution

The project team evaluated several RFID-based hospital tracking systems to find a system which would most adequately suit its requirements, which included:

- Sufficient real-time actionable intelligence to make business decisions that would improve care while systematically reducing waste.

- Ease of installation to reduce implementation costs and disruption of patient rooms.

- Compatibility with existing WiFi infrastructure

The team eventually selected TeleTracking (then operated under the branded name, RadarFind) which was deployed in 2009 at WakeMed Cary Hospital.

"Initially, there was hesitation about implementing an asset tracking system," said Mary Schilder, director of information services consulting for WakeMed Health & Hospitals. "We chose TeleTracking after working with a leadership team representing each area impacted by the system to ensure that the project aligned with the hospital's overall business objectives for improving quality of care while reducing costs."

"It was also a decisive benefit that the RTLS seamlessly integrated with our infrastructure," Schilder said. "That avoided interference with hospital operations and staff processes and there was no need to close off patient rooms during the system's installation."

When deciding which assets to tag first, Schilder recommends hospitals consider a range of factors including:

- Number of assets and cost per item

- Asset category nomenclature

- Rental agreements for a given item

- Whether the item will be used hospital-wide or in a particular specialty area

- The current process for obtaining clean medical devices for patient care

For WakeMed Cary Hospital, tracking expensive IV pumps was the first priority. Additional assets tagged at the start of the program included ventilators, dopplers, EKG carts, and blood pressure and vital signs monitors.

### Results

With utilization data gathered by the system, WakeMed Cary Hospital improved asset visibility and analyzed information about the actual use of equipment at any given time, including whether or not a piece of equipment was owned or rented. This information enabled the hospital to decrease equipment rentals by 20 percent and increased optimization of owned equipment. Further reductions were made by avoiding the purchase of new pumps. Prior to installing RTLS, WakeMed Cary Hospital had been working with a third-party asset management firm to handle the distribution of IV pumps to patient care areas. By using RTLS

to further automate the distribution management process, the hospital was able to bring this function in-house. Even with the addition of staff, the bottom-line costs for asset management and rental equipment were reduced.

WakeMed Cary Hospital continues to improve day-to-day workflow processes based on the data RTLS provides and to identify areas of further improvement from all sectors of the hospital, making the implementation a success for the hospital as a whole. For example:

Materials Processing Distribution (MPD) staff used RTLS to quickly locate IV pumps needing disinfection and accelerated the deployment of clean equipment to patient care areas.

Nurse supervisors identified other assets that were difficult to locate and tagged bladder scanners, pulse oximetry monitors, dopplers and EKG carts. Nursing staff quickly realized the amount of time saved finding these essential devices, typically needed for urgent situations where seconds matter, and became the greatest advocates for the technology.

The clinical engineering staff also found that the RTLS system saved them considerable time in locating equipment for necessary repairs and preventive maintenance in accordance with regulatory requirements. They also recommended several other specialty items for tagging, such as a light source box used for fiber optic illumination in surgeon head lamps.

The successful widespread adoption of the system throughout the hospital has presented a welcome problem: the demand for tagging other medical devices has soared! In response to new requests for tagging equipment, WakeMed Cary Hospital has established criteria for tagging that targets high cost assets, assets that are frequently lost or devices needed in urgent situations, such as a doppler or laryngoscope.

WakeMed Cary Hospital continues expanding use of the RTLS system applications and is also introducing the system to other WakeMed facilities. These best practices will ensure that the system continues to support hospital goals of providing exceptional patient safety and care.

## About WakeMed Health and Hospitals

WakeMed Health & Hospitals, one of the first private, not-for-profit health care organizations in the country, is based in Raleigh, N.C. WakeMed's team of 7,000 nurses, technologists and medical support staff and more than 1,000 affiliated physicians serve the residents of North Carolina using the most advanced technologies and facilities to ensure the finest in health care. For more information, visit www.wakemed.org.

## About TeleTracking

For over two decades, TeleTracking Technologies, the world leader in automated patient flow, has applied proven principles of logistics management to hospitals and health systems to help them enhance patient care, improve financial performance and gain competitive advantage.

Our industry-leading software and consulting services create an enterprise-wide platform that connects patient flow to patient care for better outcomes.

TeleTracking solutions reduce overcrowding, cut costs, generate revenue, fight the spread of infection, manage assets, accelerate patient transfers and provide a wealth of data for continual operational improvement and business development.

We provide process planning and patient flow redesign through our consulting division, Avanti Patient Flow Services®, data analytics tools and services through our Business Analytics Division and real-time asset and patient tracking.

As the leading provider of innovative patient logistics management, TeleTracking and our more than 850 clients have formed an alliance of shared knowledge and mutual trust which is dedicated to the ongoing improvement of patient care.

TeleTracking AssetTracking was previously marketed under the brand name RadarFind.

For more information: www.teletracking.com / 1.800.331.3603 / info@teletracking.com

## CHT
Compliant Healthcare Technologies, LLC

# A New Era
# in MEDICAL GAS ➡ Testing

## Training and certification is an important element in the new era of medical gas testing

BY DALE HOYES



Every healthcare facility nationwide desires to keep patients safe while being treated. The importance of regularly monitoring and testing medical piped gas systems is a critical element of life safety. Emphasis on medical gas systems, by the Joint Commission, formerly the Joint Commission on Accreditation of Healthcare Organizations, a private sector United States-based not-for-profit organizations, and other agencies, has been warranted throughout the years because of past hazards and incidents.

Without clean, contaminant free medical gases, operational alarm panels and maintained functional source equipment, healthcare facilities could find themselves in violation of code compliance, or worse, in a situation where patient safety is at risk.

Training and certification is an important element in the new era of medical gas testing. Attaining professional credentials, whether it is in-house maintenance staff, a contracted verifier, or as a tester or installer, has become increasingly important.
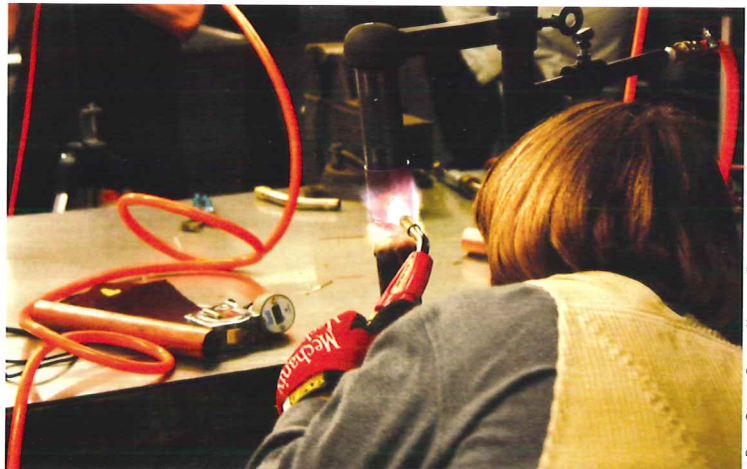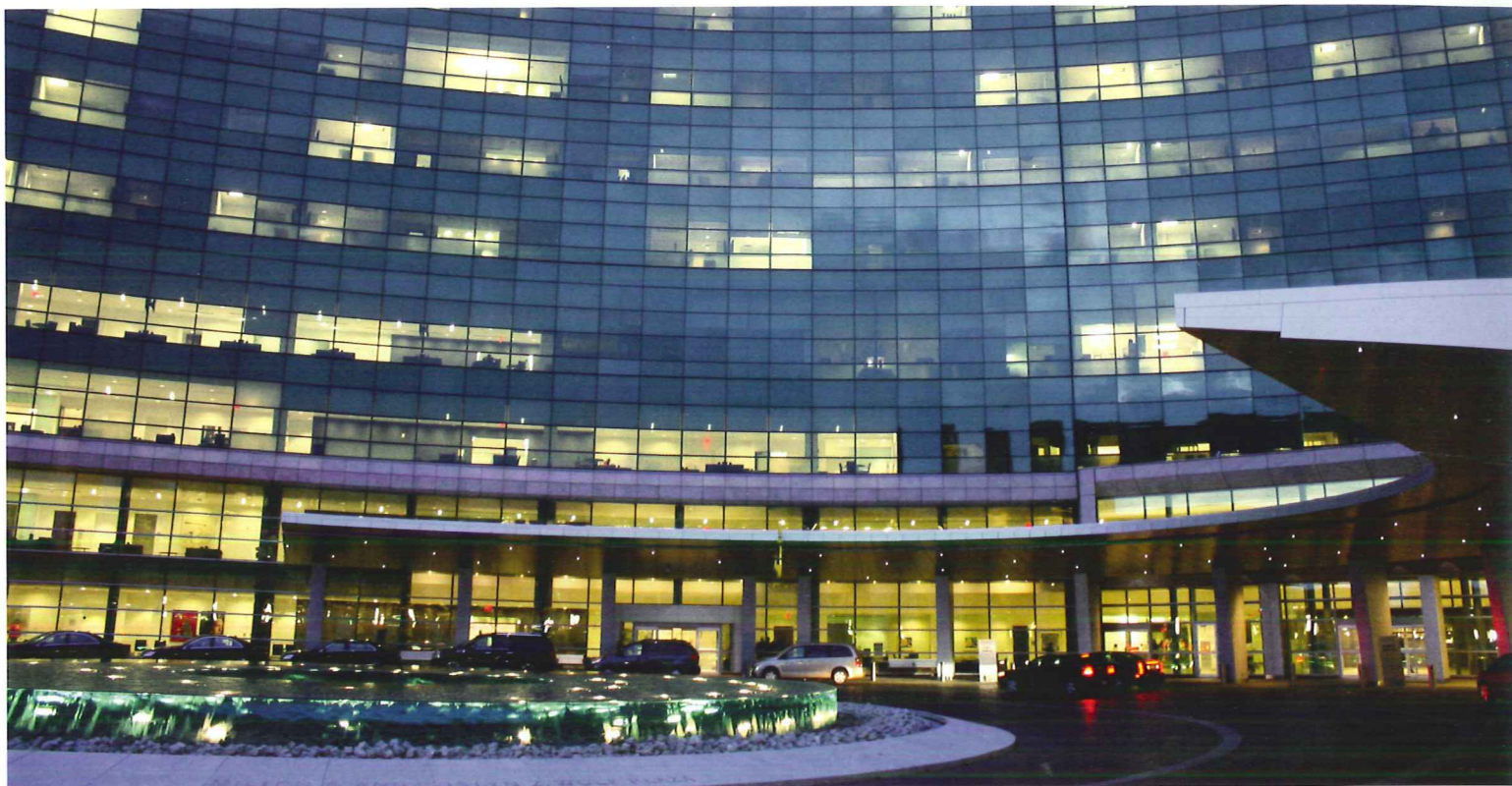
Certifications through classes and seminars, such as ASSE/6005-Medical Gas Systems General Information (for architects and engineers), ASSE/6010 (for medical gas systems installers and brazers), ASSE/6020 (for inspectors), ASSE/6030 (for verifiers) and ASSE/6040 (for maintenance personnel), will not only assist with back-end maintenance and verifications of medical gas systems but also assist with the front-end proper design and installation of new medical gas system projects. The ability to identify design errors and educate installers on proper documentation and required testing, prior to installation and before calling the verifier, is key. All systems should be functional prior to a verifier's arrival and serve as the final step before "turning over" a medical gas system to a healthcare facility. Remember, once the medical gas system is turned over, the facility owns any deficiencies or items that were missed, and the facility's engineering department will be responsible for making the corrections.

Medical gas testing can be accomplished through an internal program maintained by the healthcare facility itself, or through a contracted medical gas testing company hired to give objective findings.

The JC, or other Centers for Medicaid and Medicare Services (CMS) survey agencies, verify the existence of a properly functioning medical gas program to meet specific code requirements and ensure patient safety. Surveys used to be scheduled in advance with a healthcare facility; however, "surprise" visits are not uncommon today, and healthcare facilities must have their program and documentation up to par. It is suggested that a facility become familiar with their verifying

body as well as the testing agencies.

Certain uncorrected deficiencies, or lack of program documentation, could contribute to reduced scoring and lead to decreased funding until the program is brought up to code, thus helping to ensure patient safety.

**Testing evolves**

Traditional testing methods had only supported the creation of manual paper reports supplied with verification results presented in a 3-ring

binder. But these have now evolved into a new era of medical piped gas system programs. Compliant Healthcare Technologies, LLC has developed a comprehensive proprietary software, CHxProgram, which takes manual compliance monitoring and reporting to a new level. Working in conjunction with the Cleveland Clinic Foundation in Cleveland, the CHxProgram was developed, tested, implemented and continues to evolve with the many facilities that system serves. While physical work-hours still verify the medical piped gas systems and correct deficiencies, the CHxProgram allows on-site access, input and viewing of testing results, and also provides the testing history of all medical gas piped system assets from the patient terminal to source equipment. The CHxProgram features an asset tree for easy tracing of all medical gas assets while providing an Environment of Care Tracer program for JC compliance. With a few clicks of the mouse, a user can determine the source equipment linked to a zone, floor and specific room, anywhere within the facility.

The powerful reporting within the CHxProgram is sophisticated, yet intuitive, and highly informative. The CHxProgram asset management module allows reporting of all assets, testing history and associated deficiencies and corrections. Authorized users can drill-down through four levels of information, sorting to individual zones and their assets. Colorful graphs and charts represent how the facility's program is evolving and improving, which makes every aspect of managing the medical piped gas system easy. When managing planned and preventive maintenance, the CHxProgram allows any facility to create and manage a Plan for Improvements. ASSE adds validity to testing and maintenance requirements.

## Better reporting

Recommendations are derived from the ASSE Series 6000, Professional Qualifications Standard for Medical Gas Systems Personnel, Annex D-Maintenance Procedures. After implementing the CHxProgram at a healthcare facility, traditional deficiencies will be identified, which then allows work orders to be manually generated. With CHxProgram, work orders can be generated daily, weekly, monthly, semi-annually, annually or periodically determined by the facility and ASSE recommendations. This allows the healthcare facility to build and manage their medical gas program more efficiently and effectively.

Pulling multiple volumes of binders for a survey has long been a traditional method of showing compliance of a medical piped gas systems program. New technologies offered by the CHxProgram allow for the creation of multi-site databases for larger healthcare systems. User-friendly applications and the ability to retrieve information from a central location simplify the process. Each facility has a password to view their individual location; however, the director or corporate manager can view all facilities based on administrative rights granted.

This feature has proven very useful during the budget cycle or when facilities utilize one healthcare license. The goal should always be to ensure patient safety through proper design, installation, verification and maintenance of medical piped gas systems. The goal of this new era: to provide not only technologies, but a solid and trusted partnership between a healthcare facility and a medical gas testing service. The new era provides continuous improvement of a facility's medical piped gas systems program and strengthens its ability in becoming a world-class leader in the changing world of healthcare. **BXM**

*Dale Hoyes is South East General Manager, Compliant Healthcare Technologies, LLC*