CASE STUDY	Deployment of a Staff and Equipment Location Strategy That Leads To Improved Workflow Efficiencies and Patient Care

Nurse Call Technology Highlights:
* Seamless integration with CommonPath nurse call
* Full visibility on the location of every piece of equipment and staff member wearing a locating badge
* Unique ID numbers allow caregivers to locate equipment based on type and specific serial number
* Reporting capabilities provide tools for continuous improvement as well as problem resolution
* System connected into the existing BRRH network with server side software installed in the data center utilizing VMware

Project Scope

Boca Raton Regional Hospital (BRRH) used the 2010 installation of a new CommonPath™ Nurse Call system to establish a more robust staff locating and asset tracking capability. Their old system allowed for basic staff locating tied to patient requests using badges that automatically cancelled a patient request when the caregiver entered the room. Reporting was limited with the old system, and BRRH knew that improved reporting capabilities would have numerous benefits.

A goal for the new system was to combine functionality and reporting that could improve patient care and staff efficiency. BRRH also wanted to implement a system that could help staff locate important equipment throughout the facility. The ability to seamlessly integrate locating capabilities into the new nurse call system was a clear advantage. And, CommonPath's software-driven approach meant staff could work with the nurse call and locating functions with minimal training.

"We knew that a more robust staff locating and equipment tracking system would directly correlate to and impact the level of patient satisfaction," said BRRH Vice President and Chief Nursing Officer Melissa Durbin. "The ability to seamlessly integrate locating capabilities into our nurse call was also an advantage, making it easy for caregivers to use both of these systems."

BRRH's Approach

BRRH worked with Critical Alert Systems to design and pilot the new CommonPath locating system on one floor before installing it on all of the hospital's eight nursing floors and in the ER. Both nursing and IT staff were involved in the process, providing critical perspectives that allowed the system design to achieve a high degree of accuracy and reliability.

Using infrared technology, staff and equipment are tracked via lightweight identification badges that transmit their location to receivers in rooms and corridors throughout the hospital. Each badge transmits a unique code that identifies specific equipment as well as staff members by name and their designation as an RN or a Personal Care Assistant (PCA).

Integration of the staff locating system with the CommonPath nurse call means when an RN or PCA enters the patient room, the system closes the workflow request and creates a detailed electronic record of the response. BRRH customized their system so that requests will only be closed by a response by the appropriate caregiver. For example, if a patient request requires an RN for fulfillment, a PCA entering the patient room will not close the request. Escalations are automatically triggered until the system registers that the workflow request has been fulfilled.

A key consideration, and challenge, for the new locating system was to monitor the movement of equipment from the ER to other floors. BRRH has tagged a variety of equipment to be tracked by the system – from wheelchairs, scales, hard-of-hearing phones and defibrillators to crash carts, nursing carts and computer carts. Each piece has a unique identification number that allows caregivers to locate equipment based on type as well as a specific serial number.

"We knew that productivity was impacted whenever staff had to search to find necessary equipment," said BRRH Chief Information Officer Robin Hildwein. "Technology had a role in solving that problem by creating a system that could help caregivers quickly and easily access equipment that can improve patient care."

Deployment Highlights
During the system pilot, Critical Alert engineers worked with BRRH to identify scenarios that guided the calibration of the locator signals and the placement of receivers that track badges. In most units, a sensing device is located at each door threshold and most patient rooms have two devices. Adapted to work with the building's architecture, the locating system was customized every step of the way, including the fine-tuning of the signal strength.

"We ran a lot of tests during our pilot phase to make sure that staff just passing by a doorway would not trigger a reading from a patient room sensor," added Ms. Hildwein. "Most of our patient rooms have two sensors, and the positioning needed to detect a caregiver wherever they are in the room. The result is a system that gives us an incredibly accurate, real-time picture of staff workflow and equipment location."

The CommonPath system connected into the existing BRRH network and the server side software was installed in the data center utilizing VMware – eliminating the need for a dedicated server to run the system. Staff can easily find equipment or caregivers by using one of 17 CommonPath call answer terminals located at every nursing station, or from the browser of any PC on the network. Staff accesses both the CommonPath nurse call and the locating system from these devices, and the intuitive windows-based design requires virtually no staff training.

The screens give full visibility on the location of every piece of equipment and every staff member wearing a locating badge – the system even identifies badges whose batteries are running low. As a result, clinical equipment can be easily found – reducing patient wait time and giving caregivers more time to spend with their patients. Doctors and others can also quickly locate caregivers when they are needed.

In addition to the staff locating and asset tracking capabilities of the system, BRRH has tapped CommonPath's flexibility to add new functionality to their nurse call. The system is able to toggle easily between modes, allowing patient calls to be answered by a centralized operator or at the unit/floor level. BRRH also has connected patient beds to the nurse call system, allowing them to monitor for potential patient falls.

System Benefits Since Deployment

The capabilities of the CommonPath staff locating and asset tracking system have been a boon for productivity at BRRH. The dynamic mapping of equipment and staff is helping caregivers provide the care that's needed, when it's needed. Even the discharge process has been enhanced, with BRRH volunteers able to quickly and easily locate available wheelchairs to transport patients. Behind the scenes, the reporting capabilities for the locating and nurse call systems provide insight and tools for continuous improvement as well as problem resolution.

"It's important to have a system that provides nursing directors with daily rounding reports on how often and for how long caregivers were in a patient room," noted Ms. Durbin. "We know that the CommonPath system has helped reduce patient wait time and the reports help make a direct correlation between how we provide care and the level of patient satisfaction."