

The Johns Hopkins Hospital



ENTERPRISE CASE STUDY

In 2012, The Johns Hopkins Hospital opened its state-of-the-art, 1.6 million-square-foot facility. Initially, Midmark CareFlow™ RTLS (real-time locating system) was installed throughout for asset tracking and nurse call automation. The solution's scalability to additional applications enabled Johns Hopkins to expand its CareFlow RTLS footprint to nearly all inpatient areas, supporting patient flow and staff efficiency.

RIGOROUS SELECTION PROCESS LOCATES BEST SYSTEM

As detailed in Healthcare Informatics, Johns Hopkins' selection team narrowed several RTLS proposals to three, including Midmark's infrared (IR) and radio frequency (RF) solution, a beacon IR/RFID system, and a Wi-Fi based technology. The finalists were evaluated in a 12,000-square-foot simulation center for their ability to track assets and locate personnel. Midmark RTLS out-performed its competitors with bed-level accuracy and was the only system selected to move on to the pilot stage.¹

ASSET TRACKING: THE FOUNDATION FOR SUCCESSFUL SCALABILITY

When the new facility opened, CareFlow Asset Tracking was one of the first RTLS solutions deployed. Using the asset platform ensures that care areas have optimal numbers of critical assets available, enabling staff to easily locate important assets by using the CareFlow Enterprise View® List and Floorplan.

INSTALLATION HIGHLIGHTS:

CareFlow RTLS Applications

- Asset Tracking
- Nurse Call Automation
- Staff Locating
- Staff Duress

Largest CareFlow RTLS Installation

- 14,000+ asset tags
- 4,000+ personnel badges
- 5,100 sensors in 20 buildings

ON-TIME CARDIAC CASE STARTS IMPROVE 25% WITH EFFECTIVE ASSET MANAGEMENT

In specialized care areas like the OR, surgical delays were often caused by missing equipment, particularly IV pumps. With 33 new state-of-the-art operating rooms, and the need for large numbers of medical devices for each surgery, the cardiac OR team sought to better manage high-demand assets and reduce surgical delays.

Using CareFlow™ to locate the needed assets, staff review pump availability each night and stage equipment for the next day's cardiac surgeries. When this method was launched in 2016, on-time case starts improved by 25% for cardiac cases², reducing frustrations for staff, patients and waiting family members.

"Our new home represents our vision for healthcare. It has the space and technology to match our researchers' scientific knowledge, our faculty's medical acumen, and our staff's clinical skills, but it also adds the patient experience as the fourth critical dimension in this equilibrium."⁴

Edward Miller, M.D.

Johns Hopkins Medicine Dean

EVS DOUBLES PRODUCTIVITY FOR SERVICE CARTS

Prior to using CareFlow Asset Tracking, stocking environmental services (EVS) carts for an institution the size of Johns Hopkins was a stressful, time-consuming task. Typically, one 8-hour shift was dedicated to finding and stocking 30 service carts. By affixing the carts with Midmark RTLS asset tags, staff gained clear visibility to cart locations, allowing more than 60 service carts to be stocked during the same 8-hour shift.³

STAFF DURESS ENHANCES SAFETY IN EMERGENCY DEPARTMENT

Although violence against healthcare workers and patients could happen during any point in the care continuum, emergency departments tend to be at a higher risk for acts of violence against staff. CareFlow Staff Duress gives medical staff the ability to send an urgent alert for help using the RTLS badges. When the badge button is pressed, security is immediately alerted, sending messages to wireless phones, computer workstations and email. The messages contain essential information including the name of the person needing help and exact location, allowing security and staff to respond immediately.

RESEARCHERS USE RTLS TO MEASURE PATIENT AMBULATION FOR PEER-REVIEWED STUDY

In a study published in *The Archives of Physical Medicine and Rehabilitation*⁵, Johns Hopkins researchers reveal that

patient ambulation is accurately and automatically measured by CareFlow RTLS. Selected patients in the neuroscience inpatient unit wore RTLS badges during a two-minute walk test. Adhering to stringent study protocols, researchers found that CareFlow accurately captured two key mobility metrics with high accuracy: the distance traveled by the patient and the ambulation speed of the patient.

While promoting ambulation during acute care hospitalization is critical to successful patient recovery and reducing readmission rates, traditional mobility measurements often rely on physical observations and manual recording. By leveraging the existing Midmark RTLS infrastructure at Johns Hopkins, researchers established that clinicians can effectively and accurately support patient ambulation initiatives without burdensome manual methods.

OPTIMIZING PATIENT FLOW IN ONCOLOGY

When the Skip Viragh Outpatient Cancer Building opened, CareFlow RTLS was again expanded, this time to help coordinate oncology care.

Providing in-the-moment visibility to patient location and cancer center operations, the CareFlow Patient Flow solution helps improve staff coordination and the patient experience.

1 Healthcare-Informatics.com, "[RTLS for Asset Tracking and Staff Location](#)," January 19, 2012.

2 "A Multi-Faceted Approach to Leveraging an RTLS Investment" Anthony Petrucci, R.T. (R) CV CIIP, Imaging Informatics Analyst, The Johns Hopkins Hospital, 2016 VUE Versus User Group Experience.

3 "Innovative RTLS Integration for Process Improvement & Patient Safety," Anthony Petrucci, R.T. (R) CV CIIP, Imaging Informatics Analyst, The Johns Hopkins Hospital, HIMSS15 Annual Conference & Exhibition.

4 FierceHealthIT.com, "[Technology to Redefine Medical Care, Patient Experience at New Hopkins Hospital](#)," March 29, 2012.

5 "[Using a Real-Time Location System for Assessment of Patient Ambulation in a Hospital Setting](#)." The Archives of Physical Medicine and Rehabilitation, July 2017 issue.