



# Real-Time Asset Tracking Drives Emergency Care Goals At Washington Hospital Center

## Unprecedented Insight Enables More Informed Decisions And Better Patient Care

### CHALLENGE: REDUCE MEDICAL ERRORS

In 1998, three years before the Sept. 11 attack on the Pentagon, Washington Hospital Center began proactively looking at how to improve patient care in the emergency room. To that end, the hospital secured a federal grant to evaluate how to design emergency medicine for the future.

When the Pentagon was hit, bringing all seriously injured patients to Washington Hospital Center, the event reinforced the commitment to enhancing every aspect of the emergency care experience. The center sought to answer, how does ER medicine need to evolve to address major events like Sept. 11, bombings or Metro system accidents?

Today, the initiative has grown into the ER One Center for Building Science, under the MedStar Institute for Innovation. The project takes fresh approaches to difficult problems through technology and systems of care delivery. Specifically, a think tank of physicians, nurses, architects, researchers and others consider how building design, from flooring to lighting, can influence healthcare.

“Evidence shows that if a caregiver is safe, comfortable and free from distraction, there are fewer errors”, said Ella Franklin, managing director of the ER One Center for Building Science.

### LOCATION GRANULARITY DOWN TO 1-2 FEET

Early on, Franklin and the team identified real-time location systems (RTLS) as a critical piece of their vision, but were even more motivated after the terrorist attacks of Sept. 11.

“Part of the tragedy for families in New York City and D.C. was that they couldn’t find loved ones as they moved among hospitals”, Franklin said. “That was the impetus to evaluate different options for location tracking. We felt that real-time visualization of people and assets would be really important in delivering optimal care.”

The ER One Center chose to implement Zebra’s Dart Ultra-Wideband (UWB) for RTLS. UWB uses radio frequency technology to transmit large amounts of digital data wirelessly. By tagging objects, and noting contact with people, for example, the hospital can follow the spread of germs.

Washington Hospital Center deployed the RTLS asset tags from Zebra to keep tabs on about 3,000 assets. The real-time asset location tracking system uses Ultra-Wideband and GPS technology, and is the only single wireless, industry standards-based IEEE local area network solution.

“What we liked about the technology was the granularity”, Franklin said. “We wanted to use the technology to slow down the spread

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#### Customer

Washington Hospital Center

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#### Industry

Healthcare

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#### Challenge

Improve patient care with a better understanding of the location and movement of people and assets.

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#### Zebra Solution

- Dart Ultra-Wide Band (UWB) Real-Time Location System sensors and tags

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#### Results

- Enables asset location granularity down to items within one to two feet of each other
- Provides usage data for required government reporting
- Reduced the purchase of medical equipment
- Offers insight that drives better decision-making and ultimately better patient care

of infection in the hospital by knowing every single person or item exposed to a patient. That granularity allows us to make associations between people and equipment.”

Working with Zebra on the number and position of receivers, the hospital has achieved a tight level of granularity in tracking interaction between items. Now, they can track two tagged objects that come within one to two feet of each other.

## **DETAILED REPORTING ON PATIENT, ASSET MOVEMENT**

In deciding which items to track, the hospital defined the criteria as things that move quickly, have a high replacement cost, or that are lifesaving. But ultimately, all uses go back to supporting patient care. For example, tags on cardiovascular assist devices allow caregivers to locate them very quickly when needed.

The solution also provides insight into patient movement, without having to actually tag patients. For patients that wear cell-phone-sized heart monitors, which are tagged, caregivers can let patients be mobile and still know their location if the monitor indicates a need for help. And by following the path of wheelchairs and stretchers, the hospital understands patient trajectories.

“We learned that, in the healthcare environment, nothing moves predictably”, Franklin said.

During surgeries, Washington Hospital Center accurately knows, and can show, that certain legally required items were actually in the operating room. “RTLS gives us a very reliable report on where required OR items are”, Franklin said.

Different groups throughout the hospital, from caregivers to maintenance staff, log into the RTLS software for asset information. By tagging cardiac telemetry monitors, staff can find and collect them for required weekly maintenance.

With at-their-fingertips data from RTLS, Washington Hospital Center also has information required by city and federal entities that have given grants to the organization. Using the software, the hospital can prepare reports demonstrating specific asset usage.

## **BETTER CARE, LOWER COSTS**

At Washington Hospital Center and the ER One Center for Building Science, RTLS has only scratched the surface of its potential in tracking people, assets and processes. Already, the technology enables teams to understand patterns of asset usage, helping draw valuable insight for everything from budget planning to staff training to how to prevent the spread of infection.

“We know for sure that we have reduced our purchase of medical equipment by knowing where assets are”, Franklin said.

And by knowing the exact location of critical patient-care assets, caregivers have what they need to deliver optimal care.

Looking ahead, Franklin believes RTLS will help move patients through the hospital faster and provide even more applications that contribute to patient care. “Our mission is to figure out how to make healthcare better and safer and we do think location tracking has the capacity to do that”, she said.

## **About Washington Hospital Center**

Washington Hospital Center, with 926 beds, is the largest private hospital in the nation’s capital. It’s also now ranked first among all 57 hospitals in the Washington, D.C. metropolitan region by U.S. News & World Report, recognized for its heart and heart surgery, endocrine disorders, geriatrics and ear, nose and throat care. The not-for-profit hospital is a member of MedStar Health system and shares a 47-acre campus with three medical facilities in Northwest Washington, D.C.

