

CASE STUDY

Summa Akron City Hospital, Tracking Cot Movement in the ER



Background

Summa Health System is one of the largest integrated delivery systems in Ohio, encompassing a network of hospitals and community-based health centers, a health plan, a physician-hospital organization, an entrepreneurial entity, research and medical education and multiple foundations. Summa is nationally renowned for excellence in patient care and for exceptional approaches to healthcare delivery through a diverse portfolio of operating entities.

Summa serves more than one million patients each year in comprehensive emergency, acute, critical, outpatient and long-term/home-care settings, and represents more than 2,000 licensed, inpatient beds on the Summa Akron City Hospital, Summa St. Thomas Hospital, Summa Western Reserve Hospital, Summa Barberton Hospital, Summa Wadsworth-Rittman Hospital, Summa affiliate Robinson Memorial Hospital and Crystal Clinic Orthopedic Center campuses. In addition, outpatient care is extended throughout the area in nine community health centers. Summa's clinical services are consistently recognized by HealthGrades, U.S. News and World Report, Thomson Reuters and The Leapfrog Group.

Challenges

There is a national epidemic with emergency department overcrowding which often results in EMS having to wait to off load their patients. This practice is not only a patient safety concern but a community safety concern as well. When an EMS crew is waiting for a bed, they are unable to care for other patients that need medical attention in their communities. In the case of cross-trained dual-response paramedics who are also fire

AT A GLANCE

Background

Summa Health System is one of the largest integrated delivery systems in Ohio and represents more than 2,000 licensed inpatient beds.

Outpatient care is extended throughout the area in 9 community health centers.

Challenges

An overcrowding dilemma at Summa Akron City Hospital created a shortage of beds and hospital staff, meaning EMS squads had to wait to unload patients.

Reduce wait times for both EMS squads and patients and streamline ER services.

Solution

Barcoding's RFID cot-tracking solution. RFID tags affixed to cots, and Barcoding's CaptureTech CTR3100 RFID Reader.

Results

Access to critical data from its ER entrance. The ability to treat more patients in less time so EMS squads can move on to the next emergency.

More efficient staffing and decreased patient wait times.



fighters the community is left without adequate fire protection as well. This is a major concern expressed among public safety administrators as well as an additional expense to municipalities when they have to bring in on-call personnel to ensure coverage.

Summa Health System's largest tertiary center, Summa Akron City Hospital, is a level one trauma center, as well as an accredited chest pain and stroke center. Its emergency department sees about 75,000 adult patients annually from the some 17,000 EMS squads arriving at Summa Akron City by one of the more than 20 EMS agencies from surrounding communities. As with other hospitals, Summa Akron City occasionally suffers from ED overcrowding. When EMS brings a patient to the emergency department, they are generally required to stay with that patient until he or she is placed in a bed and formally transferred to a nurse/attendant. This of course cannot occur if there are no beds and staff is busy.

In order to reduce EMS wait times, the hospital needs to have access to critical information, most important "how long each EMS agency spends in the ER." Also critical is determining when the busiest times for squad traffic are. Knowing the "in and out" movement of EMS teams will let the hospital evaluate staffing levels and determine if there are issues to address at specific times or days during the week.

Solution

Barcoding, Inc., worked with Summa Akron City Hospital to develop an RFID cot tracking solution. This hands-off solution tracks each cot moved in or out of the ER entrance, capturing the date and time of each move. By analyzing the movement in and out of the ER, the hospital can identify the length of time each cot was in the ER and, subsequently, how long each EMS team was there as well.

This information can be examined to understand staffing levels; by taking proactive steps to reduce wait times, the ER is implementing staffing and policy changes.

Each EMS cot is affixed with a rugged RFID tag.

Currently these tags are strapped on to the cots because the cots are the property of individual EMS companies and cannot be permanently attached.

At the EMS entrance, the CaptureTech CTR3100 is mounted on the wall. Once the device is plugged into a standard wall outlet, it is ready to start collecting data. Some care and thought must be taken to capture the RFID tag information.

Information can either be collected and stored on a USB drive or the device can be integrated into a network via wireless 802.11 b/g/i or an Ethernet connection.

Currently, the data is captured in a CSV file and analyzed using Excel; however, the device can be configured to pull data into any open source database application.

Results

Summa Akron City Hospital now has access to critical data from its ER entrance, including when EMS crews enter, when they leave and how long they are in the ER. This information gives Summa the ability to analyze wait times and adjust staffing levels to accommodate busier times.

"Summa Health System consistently strives to bring our community the highest quality care. Being able to track the movement of EMS cots in and out of our ED shows us where staff levels may need to be increased or processes modified to improve flow. It also it allows us to monitor the impact of any interventions. By getting our EMS squads through the ED faster, they can more effectively serve their communities."

— **DR. FRANCIS MENCI, MD**
EMS Director, Summa Health Systems

Incorporating CaptureTech Hospital System

To capture data of cots and gurney's moving in and out of your ER, or any other specified area in your facility, you will need to properly tag each cot/gurney with a passive RFID tag and install the CaptureTech CT-R3100 RFID reader.

RFID tags should be placed on the cot/gurney where they will be read by the RFID reader. RFID tag placement and the proper location of the RFID reader are critical in creating a successful implementation. If you plan on installing this system yourself, it will most likely involve a lot of trial and error to find the right tag for your cots and gurneys as well as the placement of the tags and the reader.

Working with the professional services RFID team at Barcoding Inc. means the right tags are chosen for your cots and gurneys and that are placed in the proper locations. Readers will be set-up in the optimal locations, connected to your network (if that is required). The system can be set up to start collecting data in a matter of hours without any interruption of service in your facility.