

Revolutionizing Emergency Care: Setting A New Standard in Patient Triage, Tracking and Treatment



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– Fire / EMS Captain II Robert Pye of the Arlington County Fire Department

Situation: Need for a New Approach to Patient Triage and Tracking

Located in Northern Virginia, the Arlington County Fire Department and Fairfax County Fire and Rescue Department recognized the need to improve triage, tracking and cross-jurisdictional communications in emergency healthcare situations. So they began searching for a solution to help them improve patient care and tracking from the incident scene all the way through to hospital admission.

Solution: An Electronic Patient Triage and Tracking System

The fire and rescue teams soon discovered an electronic patient triage and tracking system that stood out from the rest: the HC Patient Tracking System from Global Emergency Resources. The HC Patient Tracking System uses Motorola MC75 handheld computers to transmit vital patient health information and pictures of injuries to command centers, hospitals and other emergency management agencies in real-time.

Results: A Successful Pilot Project Delivers Better Situational Awareness and Improved Patient Care

The electronic patient triage and tracking system was put to the test by the Arlington and Fairfax Counties fire and rescue teams, using it to handle triage and patient tracking during two key regional events: the Army Ten Miler and the Marine Corps Marathon. In both pilots, the system performed beyond expectations, resulting in efficient triage, tracking and treatment of patients at both events.

CUSTOMER PROFILE

Fairfax County Fire and Rescue Department and Arlington County Fire Department

- Cover a combined area totalling more than 415 square miles
- Combined total of nearly 50 fire stations
- Employ combined total of more than 1,700 first responders
- Transport a combined total of more than 13,500 patients per year

Solution

- Motorola MC75 wireless handheld computers
- HC Standard® Patient Tracking System

Motorola Partner

- Global Emergency Resources, LLC (GER)

Benefits

- Improves response times and quality of care at incident location
- Provides enhanced situational awareness in emergency patient care
- Captures and displays video, audio and photo data from the incident scene allowing coordinators to better assess a situation
- Assesses availability of medical assets and locations to best care for the injured
- Tracks patients from incident location through to hospital admittance simplifying both family and patient reunification
- Requires virtually little to no training

Delivering a New Standard in Patient Triage, Tracking and Treatment

Emergency healthcare providers throughout the United States are increasingly recognizing the need for a more coordinated, efficient approach to communications during a local, state or national emergency.

At the incident scene, first responders need a better way to record and track vital health information about the injured. At the command center, leaders need a better way to assess where to allocate resources and to send patients during an emergency. At the hospital, healthcare providers need instant access to vital data on the emergency patients arriving at their facilities.

The U.S. Federal government has also recognized the need to improve and streamline patient triage, tracking and treatment. The Department of Homeland Security recently initiated a process whereby health organizations will develop a standards-based method of tracking patients and sharing information on available healthcare resources across jurisdictional boundaries.

That's a big reason why Captain Robert Pye of the Arlington County Fire Department and Battalion Chief Glenn Bydume of the Fairfax County Fire and Rescue Department began looking for a solution that would improve the patient tracking process in Northern Virginia — one that could eventually be expanded to other neighboring areas as well.

"UPS can track a package halfway across the world but we can't track patients in the healthcare system to find out exactly where they are," says Arlington County's Pye. "It's important for us to see where our patients are at any time. When you plug technology into our standard triage procedures, it lets us do so much more than we can do today."

When Pye and Bydume saw Motorola's MC75 and the HC Patient Tracking System from Global Emergency Resources in action, they decided to test it across jurisdictional boundaries via a joint pilot project.

Electronic Tracking and Triage in Action

Within 90 days after receiving funding for the project from the Urban Areas Security Initiative (UASI), two pilots of the system were held in conjunction with the Army Ten Miler and the Marine Corp Marathon, two long-distance runs that each registers more than 30,000 runners and cross jurisdictional boundaries.

At the two events, first responders used the Motorola MC75 devices to successfully "tag" more than 100 individuals using triage tags. Around 75 of the "patients" scanned during the pilot were for testing purposes; about 25 individuals had actual injuries.

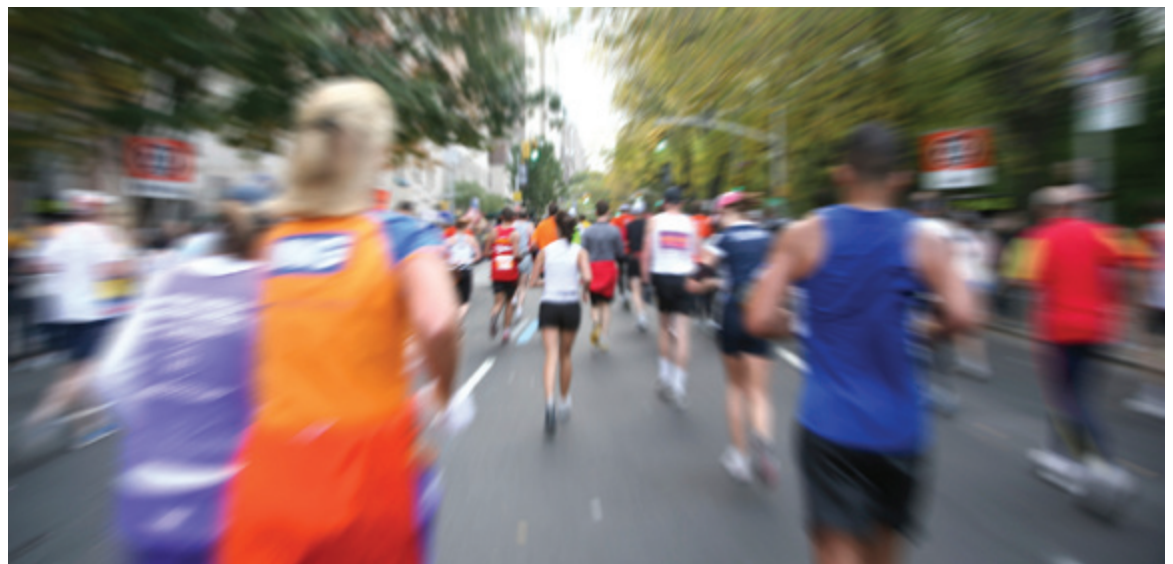
The triage tags contain a unique bar code number that becomes the patient's identification when it is scanned by the Motorola MC75. During the pilot, first responders used the devices to enter a complete range of patient data into each patient's electronic file, including essential patient information and vitals as well as audio and pictures. In a real-world disaster situation, each MC75 could be used to scan and maintain records on as many as 1,000 patients.

Thanks to the global positioning system (GPS) capabilities of the MC75 devices, a patient's exact location can be accessed at all times. Each time a patient is relocated, his tag is scanned, and the device notes his location using the available GPS coordinates.



"You don't want to buy something that's only used when a disaster happens. You need something first responders are familiar with so they just pick it up and go."

- Captain Robert Pye of the Arlington County Fire Department



“I think the MC75 is on the cutting-edge of what we need in the pre-hospital emergency services arena.”

– Battalion Chief Glenn Bydume of the Fairfax County Fire and Rescue Department



In addition, the MC75 devices support wireless connectivity, which means that patient data can be transferred in real-time to many different locations, ranging from hospitals to command centers.

During the two pilots, patient data was successfully transferred in real-time to the HC Standard back-end servers, where it was then accessed by four different remote centers and/or organizations:

- The Regional Hospital Coordination Center (RHCC), which shares statewide information on each hospital's capacity to handle patients.
- The Unified Command Center, a multi-jurisdictional command center that is shared by various public safety and municipal organizations — from law enforcement officials to county government leaders — stretching across Virginia, the District of Columbia and Maryland.
- The Mobile Command Center, an on-site Web-enabled command center affectionately dubbed “Big Red.” Commanders could view all the incident information being captured in the field on a large screen television located inside the Mobile Command Center vehicle.
- The Office of Emergency Management, the agency tasked with planning responses to disaster situations.

Once collected, all relevant patient information can also be transferred directly from the HC Standard application suite to a hospital's Electronic Patient Care Reporting (EPCR) software. The entire system meets Health Insurance Portability and Accountability Act (HIPAA) security standards.

A Look at the Benefits

The electronic triage and tracking solution allows the mobile command center to better manage healthcare resources, particularly in the case of a large-scale emergency situation. With just a Web connection, officials in the command center can immediately view a map-based image that shows them the exact location of medics and patients as well as whether a patient has been tagged with a yellow, red or green triage tag — which indicates the criticality of the patient's condition.

“From a command perspective, we were able to monitor the entire event and see what patients were transported where,” says Fairfax County's Bydume.

“The bottom line is that the system gives those in command real time situational awareness of the event. In the fire and rescue industry, rapid decision making is critical to the outcome of an event. The Motorola MC75 can assist commanders in making informed decisions about strategy, tactics and resource allocation,” Bydume says.

Of course, the system is not just useful in emergencies. It also helps Emergency Medical Service (EMS) providers easily create more complete records of every transport they make because they no longer have to retype information gathered by HC Standard from the field. After an emergency transport is successfully completed, that information can be automatically set to pre-populate the electronic patient care record with that specific patient's record. This can save an enormous amount of time for the EMS providers by avoiding dual data entry and improving accuracy of the information collected.



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The system also improves patient care. “In some medical situations such as severe burn cases, visual information such as the color of a patient’s skin or the extent and scope of a burn injury can dictate a different method of treatment and transport,” says Stan Kuzia, chairman and CEO of Global Emergency Resources. “In these cases, an electronic triage and tracking solution equipped with a color imager, as in the MC75, can give that patient a higher likelihood of survival. By communicating directly with the burn center, experts have access to more accurate and timely information upon which to make transport decisions.”

Why it is Critical to Pick the Right Device

“Another big benefit is that the Motorola device is very user-friendly, so it doesn’t take a lot of training to operate,” says Bydume. “The day of the Army Ten Miler, the first responders met at 4 am before the race started, and the devices were handed out to the team. Within about 15 to 20 minutes, they all could operate the device and the software pretty easily.”

One benefit that Pye points to is the ability of the Motorola MC75 devices to support more than just triage communications. They can be used as cell phones and as cameras, which means that first responders stay familiar with the devices because they are using them almost every day.

“You don’t want to buy something that’s only used when a disaster happens,” says Pye. “You need something first responders are familiar with so they just pick it up and go.”

A Look to the Future

The two counties are now in the process of obtaining funding from the Urban Areas Security Initiative (UASI) to complete a multijurisdictional, three-phase deployment of GER’s HC Standard Patient Tracking System. The goal is to purchase up to 500 Motorola MC75 devices in the next few years, eventually equipping all front line engine companies with the devices.

“This solution could go a lot further. It could be used everywhere to improve patient accountability in a disaster,” says Bydume. “With the GPS tracking and the camera capabilities, it could allow individuals to be more easily identified in a disaster situation. I think the MC75 is on the cutting-edge of what we need in the pre-hospital emergency services arena.”



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