Case Study

Streamlining EMS

Toughbooks move paper faster for emergency teams.

Karen D. Schwartz

Using portables will speed access to data, so "we will be able to more quickly track and identify if [a data spike represents] some type of outbreak," says Georgia EMS's Billy R. Watson.

Bob Mahoney

When it comes to saving lives during an emergency, time and accuracy are paramount. That's why many emergency medical services teams depend on ruggedized notebook, tablet and other handheld computers, which ensure reliable, fast and seamless communication.

For Georgia's EMS operators, the deployment of hundreds of Panasonic Toughbooks throughout the state promises to streamline the flow of information.

The Toughbooks will vastly increase the speed at which data from ambulance calls enter the system — from a current average of 82 days to less than 72 hours, says Billy R. Watson, acting director for Georgia's State Office of EMS/Trauma.

"Getting the information faster means that if patients are all exhibiting the same symptoms, we will be able to more quickly track and identify if it's some type of outbreak," Watson says.

Accuracy also will greatly improve. Ambulance technicians will enter the same data into the Toughbooks that they previously entered on paper forms, and then upload the data through a secure Internet site, either through a third party or the state's own EMS servers. Next, the data will be formatted for the state's web-based Georgia Emergency Medical Services Information System, which creates reports that support statistical analysis of the state's 1 million yearly ambulance runs.

“Our goal is to improve emergency medical care for citizens, and it’s hard to judge how well you’re doing unless you have accurate data. We didn’t have it until recently,” says Courtney Terwilliger, chairman of the board of directors for the Georgia Association of Emergency Medical Services. “The forms we were using were sometimes filled out by tired people at 3 a.m., and sometimes weren’t sent in for weeks.”

Cost was a secondary driver, but no less important, Watson says, especially when you consider that under the old system, each piece of paper cost 32 cents.

50%

The percentage of EMS systems in the United States that receive 1,000 to 10,000 calls per week.

Source: 7th Annual National EMS Systems Survey, *EMS Magazine*

The rugged makeup of the Toughbooks was also important because of the rough use they endure in the field, Terwilliger says. Impact, moisture, dust and dirt can impede system use, and EMS directors across the state felt strongly that standard-issue notebooks would fail to hold up.

Rugged Fit

Rugged mobile technology like the kind used by Georgia EMS is a great fit for healthcare services, says Roger Kay, president of consultancy Endpoint Technologies Associates. Kay says while hardened systems work best for traveling EMS units, semihardened systems make sense for use in hospitals because they are waterproof, easy to clean and have built-in Wi-Fi.

Arlington County Fire Department and Fairfax County Fire and Rescue Department also opted for rugged computers. The two Virginia agencies have launched a pilot project that includes rugged Motorola MC75 handheld digital assistants with the goal of improving patient tracking and triage.

“Our people work in harsh environments — hot and cold, wet and dry — and are bounced around in trucks all day,” says Capt. Robert F. Pye of the Arlington County Fire Department, who is program manager for the pilot. “The average non-mil-spec, non-ruggedized device won’t stand up to that kind of treatment.”

For more on mobile computing, check out our July E-Newsletter

The handheld units will also serve as first responders’ cell phones. They come equipped with patient-tracking software that will let users transmit patient health information, injury images and location coordinates to hospitals and other emergency management organizations.

Pye hopes the handhelds can replace a paper process in which information is written on tags and physically affixed to patients. This system has been unreliable and has caused many problems, including lost or illegible tags.

Next up is a pilot that will expand the project throughout the entire Washington, D.C., metropolitan area, creating an integrated way to share patient information. Eventually, all EMS responders in the

Washington metro area will be using the same devices. Deployment for the first phase is expected to start this fall.

Rugged Notebook Checklist

- **Go fully rugged only if necessary.** If your people work in extreme conditions, choose the most ruggedized units; otherwise, "rugged lite" may suffice and will be far less costly.
- **Plan ahead.** Estimate your memory and hard-drive requirements for at least two years out because cost and other factors may inhibit an earlier upgrade.
- **Check out the screen.** If you use the units in both darkness and bright light, evaluate the screen carefully. Try them in all potential situations before buying.
- **Look for light.** Buy a system with a backlit keyboard, a keyboard light with a task light, or a glow-in-the-dark phosphorous keyboard to ensure ease of typing in all conditions.
- **Align your selection with government specifications.** Avoid models that don't adhere to required specifications.

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