

THE MOBILE ER

**BRIDGE THE COMMUNICATIONS GAP
BETWEEN EMS AND THE HOSPITAL**



PUSHED TO THE LIMIT

As technology enhances real-time communication possibilities, EMS teams take on a greater role in patient response and outcome.

Since the beginning of the COVID-19 crisis, health-care providers and emergency medical services (EMS) first responders have been pushed to the limit. Crowded hospitals and stricter sanitizing regimens increase shift durations and add to the long list of duties to be completed in a shift. Patient screening protocols have intensified, and the nationwide shortage of paramedics continues. While the Bureau of Labor Statistics projects a faster-than-average job growth for paramedics and emergency medical technicians (EMTs), many agencies are having difficulty filling existing vacancies. The New York State Bureau of EMS, for example, reports a 9% decrease in certified responders during the past decade.

As demands increase and certified, experienced staff becomes scarce, pre-hospital patient care remains at the forefront of EMS concerns. According to an article from the National Library of Medicine, “pre-arrival notification time has a significant impact on adherence to Advanced Trauma Life Support (ATLS) protocol.”¹ More than ever, this field-to-facility interaction is critical, and a number of steps must be completed for it to succeed. Bridging the communications gap involves not a singular path, but rather a complex set of challenges, each depending upon reliable communications and robust technology.



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DATA AT DISPATCH

It all starts at dispatch, where details about the location and nature of the call are relayed. Much of this data is currently transferred from the 9-1-1 center to first responders by computer-aided dispatch (CAD) systems over mobile data terminal (MDT) and other networks. Critical health alerts stored in CAD, as well as detailed symptomatic information obtained by the scripted questions of emergency medical dispatch (EMD) protocols, provide EMS personnel with valuable patient data prior to first contact. Premise history records also alert crews to previous calls or hazards recorded at the destination. The 2019 report “Violence against EMS Practitioners” found that 67% of respondents reported physical assaults.² Access to these files can help the EMTs take precautionary measures to safeguard themselves and be better prepared to attend to the patient.

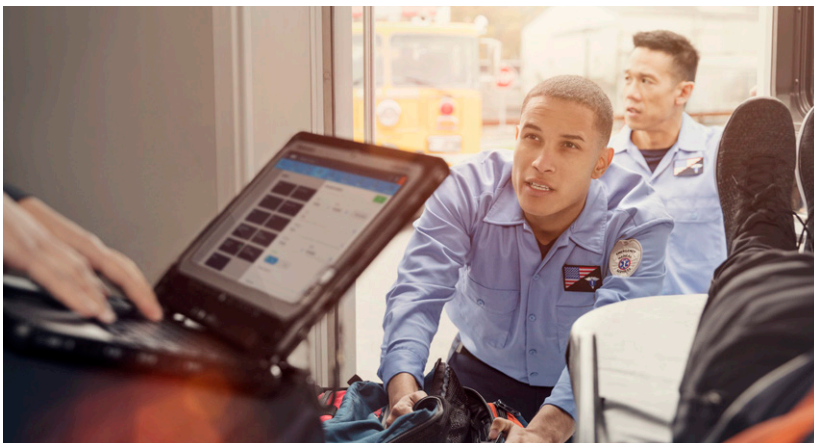
During response, connectivity with the Global Positioning System (GPS) and geographic information systems (GIS) is essential. These provide details about the physical address and the best route of travel. While the paramedic or EMT is responsible for providing care, interaction with other agencies may be required before, during and after arrival. Interoperability enables contact with law enforcement, fire departments, rescue squads and other EMS agencies, both public and private, as needed. This combination of reliable directions, real-time patient information and immediate connection to assistance, when needed, maximizes the first minutes of medical response in the trauma golden hour.

FROM FIELD TO FACILITY

It's critical to ensure first responders have access to the right information and technologies in their hands at the right moment. At the patient's side or from their trucks, EMS teams need to assess patient needs, access records, upload vitals and perform emergency treatment. This helps close the communications gap between caregivers in the field and the hospital. The exchange of vital signs can be augmented by interactive visual reviews of patients by medical personnel, creating more accurate diagnoses. electronic health records (EHRs) and electronic patient care reports (ePCRs) provide background information and patient treatment history.



Given the myriad programs, systems and agencies that need to work together to accomplish all these steps in today's data-rich world, EMS providers are seeking out cost-effective solutions that offer multi-platform networking in a single, purpose-built tablet or laptop. The EMS field has been a later adopter of technology but also has quickly demonstrated a need for durable devices. EMS requires more mobility than either law enforcement or fire users, because they typically carry their computers everywhere they go. In addition, EMS organizations of all sizes are looking to make investments in long-lasting assets that are robust and scalable for the future.



CASE STUDY

LEVERAGING RUGGED TECH TO STREAMLINE MEDICAL CARE IN THE FIELD

One successful example of how technology can be leveraged comes from Houston, Texas, where a partnership between the fire and health departments created Project Emergency Tele-Health and Navigation (ETHAN). Here, first responders rely on purpose-built Panasonic Connect TOUGHBOOK® tablets and 4G connectivity to support dispatch, documentation and telemedicine. Applied to non-emergency cases, ETHAN results in an 80% reduction in transports, with each eliminated trip to the ER freeing up an average of 53 minutes of crew time. In addition, the TOUGHBOOK tablets used by medics has proven more durable than other solutions examined, an experience supported by a PC Magazine report showing Panasonic products to be over five times more reliable than the average business laptop.

While Project ETHAN debuted in 2014, the rugged technology involved has been constantly evolving over the past quarter century.



FUTURE OF EMS

In some cases, though, the future of EMS is already here. NG, or Next Generation, 9-1-1 is a complete overhaul of our aging emergency number system, which first saw service in 1968. This upgraded version is designed to cope with the wide variety of personal communication devices now in common use and can deliver streaming video as part of a 9-1-1 call. Through interfaces, this video can be immediately shared with responding units, enabling them to visually assess the patient and the scene while still enroute. With components of this network now being rolled out, EMS field personnel will require devices that maximize this functionality.

Another horizon event is FirstNet®. FirstNet is a nationwide initiative to provide interoperable communications coast to coast for all branches of emergency service. Expanding 5G coverage and reliability, it is already in service in many localities, offering information sharing on a scale never before possible. Agencies must therefore assure that their technology is compatible with this visionary system.

Panasonic is an authorized FirstNet Master Dealer, with services available nationwide.

Advances in telemedicine, the current health-care environment and an ever-increasing catalog of real-time information and access to other disciplines all are driving enhancements to EMS performance and patient care. Rugged, purpose-designed laptops and tablets that seamlessly connect to these disparate networks and support features such as teleconferencing can help to bridge the communications gap.

HOW PANASONIC CAN HELP

Panasonic designs and engineer devices from the inside out to make them reliable and rugged. Unlike consumer-grade devices, Panasonic devices include the ability to “hot swap” batteries and screens can safely be cleaned with the same disinfectant supplies found in hospitals so workers can continue their work uninterrupted. They’ll also stand up to harsh emergency situations where an EMS technician might drop a device while transporting patients or when an ambulance stops abruptly, and the device falls to the floor.

The devices also can be used by technicians wearing gloves, and outside in inclement weather. In addition to being durable, these rugged devices work well with a range of additional accessories and applications. Companies can attach thermal cameras, barcode readers, extra LAN points and fingerprint scanners for additional features and security, streamlining work performed in the field.

Panasonic offers devices that work on both Windows® and Android™ operating systems. As applications evolve to become more browser-based, they are uniquely positioned to help mobile workers find innovative ways of deploying solutions for improved outcomes.



“Our devices can withstand the harsh conditions in which EMS teams consistently need to operate in.”

Jeff Orzech, Executive Account Manager,
Public Sector, Southeast

“Changes in public safety are driven by software, and the digital evolution is happening right in front of us. We’re in a unique position to help EMS by providing the hardware and the operating systems they’ll need as they evolve.”

Aidan Clifford, National Sales Manager
Public Sector & Healthcare, Southeast



TALK WITH OUR EXPERTS

If you have questions about the best form factor or configuration options for your specific application, talk to our experts. Panasonic has decades of technology experience with all major industries and applications. We can help you configure the TOUGHBOOK mobile computer that works best for your environment and job needs.



Contact a Panasonic customer representative:

1.888.245.6344

TOUGHBOOK@us.panasonic.com

For more about how our customizable solutions can help your business:

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¹ Ahmed, Omar Z, et al., Association Between Prearrival Notification Time and Advanced Trauma Life Support Protocol Adherence, Journal of Surgical Research 242:231-238, October 1, 2019.

² NAEMT. Violence Against EMS Practitioners, 2019.