ZEBRA CAPTURE YOUR EDGE

SUMMARY

Customer
Sumner County EMS
Sumner County, Tennessee

Industry
Public Safety, EMS

Challenge
Improve both billing and patient data collection processes

Solution
Durable and equipped with a variety of integrated features, the F5 rugged tablet by Zebra proved to be the right tool for the job

Results
Exponential improvements in both patient care and billing processes

* Zebra acquired Xplore Technologies and all Xplore products in 2018.

EMS Improves Annual Billing by $2,000,000 with Zebra* Tablets

Top Rated Emergency Medical Services in the State of Tennessee

Sumner County emergency medical services (EMS) is the 911 service for all of Sumner County, one of the largest counties in Tennessee, serving more than 150,000 residents. With 13 Advanced Life Support ambulances and six Basic Life Support units in service, Sumner County EMS employs 125 people and maintains an "A" rated service mark, the highest rating the state of Tennessee awards for public services.

Challenge
Improve both billing and patient data collection processes

With a rapidly growing service area challenging administrative operations, Sumner County's technology team began moving the organization from paper to electronic forms in order to improve process efficiencies and productivity. The county continues to deploy new technology solutions to enhance how they serve residents.

In an effort to replace its initial solution, a non-PC software application built specifically for small handheld devices, Sumner County turned to Ortivus, a provider of integrated software solutions for both EMS and public safety. With offerings for both in-house billing management and mobile field service, Sumner County's technology team needed a new hardware solution that would enable them to fully leverage all of the benefits of the selected software.

Solution
Durable and equipped with a variety of integrated features, the F5 rugged tablet by Zebra proved to be the right tool for the job

Michael Cook, Sumner County's IT manager, was in charge of selecting the device that would provide full support for its software, survive the daily stresses of the EMS environment, and meet all necessary national compliances. With experience as both an EMS technician and a technology manager, Cook knew he needed a robust computing device with a rugged and portable design that could withstand the rigors of harsh environments.

Cook evaluated several solutions, but only the Zebra F5 rugged tablet fit the bill. The solid design is tailored to highly mobile users that often compute in harsh environments, and that impressed him from the very beginning. "We looked at a lot of different rugged computing devices that just didn't meet our needs. Either they had too many moving parts, which are guaranteed to break in this environment, or they were too small to enable full utilization of the new software solution. When I saw the fully sealed design of the F5 with the virtual keyboard and integrated handle I knew this was the right device for our environment," said Cook.

Cook was also intrigued by the integrated features of the F5. After doing his research, he realized that for the same price as the other rugged PCs, he could get a fully rugged device with useful integrated features such as a barcode reader, RFID reader, fingerprint scanner and digital camera.

Cook worked with a Zebra reseller partner to evaluate multiple devices and ultimately build the complete and fully configured Zebra rugged tablet-based system. "The dedicated attention we received was refreshing and extremely valuable considering our limited resources," added Cook.

After making the decision, Sumner County EMS purchased 25 F5s for its fleet of ambulances and has found that the devices are even more capable than he first imagined. Together with Ortivus' software, the F5s are being used daily by emergency technicians in the field to:

• Facilitate a streamlined data collection process to quickly produce accurate and complete electronic patient care reports

• Provide valuable patient history to onsite emergency care givers (allergies, medications, existing conditions, etc.)

• Generate patient data and gather information to immediately begin the billing process

• Forward patient information to receiving hospitals

"When I saw the fully sealed design of the F5 I knew it was the right device for our environment." "When I saw the fully sealed design of the F5 I knew it was the right device for our environment."

**Michael Cook
IT Manager, Sumner County**

The rugged tablet PCs offer a host of technologies that help technicians navigate through their days. When an emergency call comes in and the vehicle is dispatched, the driver can access GPS directly on the tablet for guidance to the scene. Additionally, with ambulances equipped with full wireless capabilities, the tablets function as complete mobile offices. The Doppler radar and traffic updates available on all the tablets keep drivers well aware of conditions that could interrupt emergency response times.

Upon arrival, the technicians begin the process of administering care. With the F5s in hand, they are able to begin taking patient data and creating a profile as soon as they reach the patient. If the patient has been previously assisted by Sumner County, the emergency technicians are able to quickly retrieve the patient's profile, including allergies, medications and other important medical history that might affect their treatment options. The billing process also begins upon arrival and, unlike the old system, updating the records is now a much more efficient process. With the old paper system, the technicians would have to record all data on a paper form that would be sent to the billing department, which manually transcribed the information into their system. Often billing was delayed because it could take from one to several days to arrive. This process not only took a large amount of time but was composed of too many steps, each a possibility for data errors and double entry.

"Our old process was full of stages where something could get lost or recorded incorrectly. At a scene, our technicians are on the move. That makes writing perfectly legible text an impossible task. This then becomes a problem at billing. We don't want names and numbers entered into the system based on interpretation. This level of guessing creates false entries and, in the long run, costs us time and money," Cook said.

Now the process is made much simpler with the F5's rich feature set. The technician is able to pull up a new or existing patient file and begin the data collection and billing processes all at once. Using the onscreen keyboard, every action taken by the technicians is logged. Once the patient is stabilized and ready to be transported the patient simply signs the form digitally with the stylus on the tablet. Information can then be sent to the receiving hospital while in transit to the hospital to allow for proper preparations to be made. One solution that really helps to ensure patients receive immediate care is a specialized cardiac monitor connected to the F5 through a Bluetooth connection. The cardiac monitor automatically sends patient heart data to the tablet which is then distributed to the receiving hospital. Vital signs and medications administered while in transit are recorded on the tablet, which is also relayed to the receiving hospital. Making this information available prior to arrival significantly reduces the time needed to determine treatment by the receiving hospital. Once the patient arrives to the hospital, the receiving RN signs the form digitally and the form is updated and sent to billing in real time. The entire process is now integrated tightly with the efforts of the EMTs, allowing more efficient and accurate billing and improved patient care.

Results
Exponential improvements in both patient care and billing processes

With the new software and rugged tablet solution, Cook says that Sumner County EMS has improved billing by $2 million annually and achieved a nearly 40 percent improvement in billing cycle times. "We are now billing back 96 percent with our new process, which is incredible," Cook said.

Additionally, the electronic process that was once heavily based on paper is enabling a much improved patient care process. As its software solution further evolves to support the tablet, EMTs will soon be able to leverage the camera for onsite documentation in areas such as traffic accidents. The F5 itself has proven to be extremely well fitted to the rugged fast paced setting.

With roughly 40 people using the F5s during a 24-hour shift, Cook knew the devices would need to perform under pressure. The F5 has an integrated handle and durable sealed chassis that makes it rugged enough to withstand the occasional drop. Plus, Cook's decision to go with the SSD hard drive has ensured the tablets are fully optimized for the environment.

"We had one fall out the back of a truck while driving and it still worked, " Cook said, "We're a lot rougher on these things than most, and now with the availability of Gorilla™ glass for added durability, we're looking forward to adding even more tablets in the near future." The sealed chassis also presents a valuable advantage when it comes to HIPAA compliance and the security of patient data while in the field. "The lack of external ports has made these things virtually impossible to grab data off of while away from the docking solution," said Cook. The F5 also incorporates biometrics, RFID and barcode scanning for added security of data. "When the tablets are in the trucks we can remain confident that our patient data is secure."

The tablets now also function as desktop replacements in the office. Moving from a desktop to the tablet was simple due to the ease of inputting information with the stylus, the integrated handle for easy transport and the screen that is big enough for full-screen viewing of software applications. The F5 is also perfectly capable of going a full shift combined with 12V chargers and vehicle mounts. "The battery life on these things is amazing," Cook stated.

Cook also commented on his experience with Zebra's customer service stating, "Their service and support team has been excellent to work with. They have been willing to sit down and talk with us about our needs. I would definitely recommend Zebra to a colleague; I don't believe that you can get that kind of personalized attention from anyone else."

What's Next

Since implementing F5 tablets throughout its fleet of emergency response vehicles, Sumner County EMS has experienced substantial improvements in both its billing process and the ability to provide the highest level of care to its patients. Additionally, Sumner County has found the device to be versatile enough to provide them to their EMTs on bicycles during recent marathon races and other outdoor events where maneuverability is key. The rugged lightweight design of the F5 has enabled Sumner County EMS to bring their now standard level of care to even the most unconventional of settings. In this way, Sumner County EMS is constantly looking to improve its processes and streamline its services. With the adoption of the F5s, Sumner County has set an example for other emergency services to follow and leads the march toward providing the best patient care service available.

For more information on Zebra Tablets,
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