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## Wireless: Case History

# Answering the Call

**An EMS replaces a modem-based dispatch system with a wireless-technology solution, improving response times with actionable information.**

Established in 1984 as Puckett Ambulance Service, Puckett Emergency Medical Services (EMS) was built with a single mission—to provide the highest quality, reliable ambulance services to the communities they serve. They accomplish this through a rigorous hiring and selection process, continuous quality improvement, and a strong belief that to be the best, you must train to be the best. Puckett EMS has approximately 80 employees and operates 10 ambulances serving a population of more than 600,000 Georgia residents. Each year, Puckett's emergency medical technicians (EMT) and paramedics respond to more than 20,000 calls.



Partnered with Cobb County police and fire departments, Puckett EMS ensures the appropriate level of emergency services is on scene within 10 minutes, 90 percent of the time. They provide 911 emergency services in southwest Cobb County with a level of professionalism and compassion that has become well known in the community. Working closely with other public safety agencies and local hospitals, they promote a team approach to patient care. Through their training center, Puckett EMS maintains the high level of skill its EMTs and paramedics utilize with every emergency response.

Staff are continuously trained and updated on the latest treatment modalities, medications and standards of care. The training center also offers many continuing education opportunities for healthcare providers and general medical classes for the community. Puckett EMS has become an EMS industry leader and in 2004, was named Georgia's Ambulance Service of the Year. Additionally, for the last two years, Puckett has been named one of the top 25 small businesses in Cobb County.

**For more information on In Motion's onBoard Mobile Gateways solution**

### Defining the Challenge

Puckett EMS used computer aided dispatch and automatic vehicle location applications in their ambulances, and these were connected via modems to the operations center. With plans to introduce new applications such as patient care records, inventory management and electrocardiograms (ECG), Puckett realized their modems were insufficient to manage the volume of data they anticipated these new applications would be sending. In late 2005, they began investigating a variety of solutions, and after trialing the onBoard Mobile Gateway in a vehicle over a 3- to 4-week period, they determined that In Motion Technology's solution was going to be the best platform to meet their current and



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that in motion technology's solution was going to be the best platform to meet their current and future needs.



With response time objectives of just less than 12 minutes, every second counts. There isn't time to properly care for a patient and worry about communications equipment at the same time. Puckett EMS needed a reliable solution that would ensure they could stay focused on their patient care objectives. To meet these goals, they outlined a specific set of expectations the solution was to fulfill, which included the support of current and planned real-time

applications, as well as improved operations and response times. Minimal deployment and upgrade costs were also important to them, and the new solution had to ensure HIPAA-compliant data encryption security between the operations center, ED and emergency vehicles.

**Meeting the Objectives**

The faster EMS organizations can respond to calls, the better the overall patient care. Puckett EMS's contract stipulates response times must be less than 12 minutes, 90 percent of the time. Failure to meet this objective results in costly penalties. Overall response time improvements have been remarkable with the new system. Working with GPS and computer aided dispatch technology, dispatchers can now see, in real time, where all their units are located and can easily dispatch the closest unit to respond to a call.



Prerival instructions and important call information can be sent to the ambulance crews using data terminals in each vehicle and, by using a call-playback function, supervisors can examine responses immediately for quality assurance. The system enables EMTs to track "out of chute," "en route," and "at destination" times. In the last year, Puckett EMS reduced response times by almost 17 percent, from approximately 12 minutes to just less than 10 minutes. The onBoard Mobile Gateway has allowed Puckett to significantly improve operations. The billing process used to be managed by a staff of four people and processing took an average of two to three weeks. Currently, their billing is handled by 2.5 people and is turned around in a day.



Patient care records are legible and electronic, and patient demographic information can be automatically uploaded into the billing system. Being able to bill customers in a more timely fashion means payments are received sooner. Puckett EMS's billing staff is happy with the electronic system and driver safety also has improved. Deploying the new wireless solution has changed the way Puckett EMS works with their CAD/AVL (computer aided dispatching/automatic vehicle

location) system. Within a week of implementing the gateways, they were able to look at system data and found that some of their EMTs were exceeding the speed limit. By having access to the information in real-time, they were able to address these issues as they happened. In the past year, Puckett EMS has had no preventable accidents—rare for an EMS operation. Consequently, their reward comes in the form of reduced insurance expenses—a decrease of almost 30 percent over the 24 months.

Because the gateway can be set up to work in and around the ambulances, medics can take their laptops into patients' homes, gather data for patient care records, access historical records of patients previously transported, and even access the Internet to research drugs patients may be

taking. Puckett EMS is serious about their commitment to training, and allows their paramedics to use the Internet between calls to check e-mail, and to access local servers so they can complete their accreditation education on the job. They also have on-scene access to company policies, procedures and protocols wherever and whenever it's needed.

The Puckett EMS deployment has been a huge success. They dramatically improved their communications infrastructure and greatly reduced the need for end-user intervention. Simultaneously, the deployment improved the visibility into the health of the mobile data communications network. "With this wireless solution, we have seen a dramatic improvement in our response times," says Shane Garrison, vice president and COO of Puckett EMS. "Our medics can focus on patient care instead of worrying about IT issues."



**Down the Road**

As a result of the success of their deployment, Puckett EMS and the community they serve are reaping the benefits of process and operations improvements. Puckett EMS has plans for future applications that will improve patient care, response times and operations. They are testing their own proprietary inventory control system, known as AmbuTrak, and expect to deploy it in all their units in the coming months. AmbuTrak will enable Puckett to manage all the equipment and supplies in their vehicles and track equipment and serial numbers. Additionally, they are testing ECG communications with local hospitals and expect to be able to transmit this information in advance of the patient in 2007. Specialists who can determine the best treatment and the best facility for the patient can evaluate the ECG in real time. In addition, plans are underway to deploy a driver safety system that will further improve fleet operations.

While preparations for implementing new applications are in development, Puckett EMS won't have to

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worry about modems, modem interfaces, call-management protocols, interapplication contention for modems or modem call drops. Garrison is confident that the new technology they have put in place will enable Puckett to move forward with these exciting plans. "We have a communications platform that allows us to quickly and easily deploy new technology solutions to our medics that will improve patient outcomes, driver safety and overall organizational efficiency, without the need for costly and time-consuming upgrades."