



■ FEATURE

New Technology in Emergency Medicine

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Emerging technologies that may someday help emergency medical responders to treat patients in the field were reviewed by Matt Dawson, MD, University of Kentucky, Lexington, Kentucky, USA.

Greater availability of automated external defibrillators (AEDs) has reduced mortality in patients suffering a cardiac arrest. To expand the availability of AEDs, prototypes are being tested to deliver an AED to the scene when and where it is needed. These include a specialized smartphone application to pinpoint the location of an emergency and allow a drone operator to deliver an AED much quicker than by usual routes. In another system, a drone is equipped with a camera, microphone, and speaker, allowing a paramedic to remotely instruct a first responder on proper use of the AED.

Identifying the availability of nearby first responders is the goal of a program developed in London. A free smartphone application called Good Smartphone Activated Medics (GoodSAM) uses its Global Positioning System to simultaneously call emergency services and send alerts to first responders who have registered with the service. These first responders would potentially be available to perform cardiopulmonary resuscitation (CPR), open airways, or use an AED, before the arrival of emergency services personnel. The application also has a built-in crowd-sourced defibrillator registry.

In the field, emergency intubation is often accomplished under difficult circumstances. A new portable video laryngoscope (designed for indirect laryngoscopy, difficult endotracheal intubations, and routine intubations) can reduce errors. Other newly introduced tools that can improve care in the out-of-hospital setting include pocket-sized ultrasonography devices that can be synchronized with smartphone applications.

A recent study demonstrated that extracorporeal CPR and transesophageal echocardiography are emerging from intensive care and procedural units and into the emergency department (ED) to improve outcomes of cardiac arrest in the ED setting. The treatment of patients in emergency settings remains challenging, and strategies to improve the delivery of this care will likely include harnessing new technology.

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