

## *Trauma Patient Simulator*

Looking for a way to enhance its medical personnel's ability to treat the frequent and diverse casualties generated in combat, the Department of Defense asked IST for a solution.

A system was needed that provided military medical training consistent with the level of training and qualifications required for equivalent civilian medical positions. The system also should provide a method for analyzing and evaluating the impact of medical techniques and technology.

In response to this challenge, IST researchers collaborated with others to prototype the Combat Trauma Patient Simulator (CTPS). CTPS is a dual-purpose training and analysis system that enables trainees to simulate realistically the emergency medical treatment process.

### **The Approach**

IST merged existing products and new technologies to create a robust medical simulation capability. The Electronic Casualty Card, developed by Lockheed Martin, and the Human Patient Simulator, produced by Medical Education Technologies, Inc. (METI), were existing components included in the CTPS design.

IST developed a software simulation, PatSim, to integrate the functions of the casualty card and the patient simulator. PatSim queues casualties generated by the casualty card during military force-on-force exercises, then



models the physiology of the patient until the information is transferred to a human patient simulator. The simulator immediately exhibits the physiological effects of the trauma and responds appropriately, in real time, to medical treatment.

In the Department of Defense case, IST software designs enabled a direct link between the medical treatment facility and casualties simulated on a distant training field. Project designers also engineered the system to adapt to a variety of emergency trauma scenarios.

This technology will enable hospitals, emergency trauma centers, emergency medical technicians, civil defense units and other disaster management teams to enhance the quality and consistency of their training.

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