



# CRTI BULLETIN



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## New Medical Triage Tool Improves Communication in Emergency Response

A team led by WorldReach Software Corporation recently developed a web-based communication system to enable first responders—police officers, paramedics, and firefighters providing emergency medical services to casualties—to manage a crisis situation from the scene of the emergency to the hospital. Designed with extensive input from first responders, the Rapid Triage Management Workbench (RTMW) is the first software tool of its kind.

With more than 12 years of experience designing and developing software that delivers relief and recovery assistance to citizens abroad, WorldReach was looking to expand its product line when CRTI invited new research into technologies that would address the consequences of a chemical, biological, radiological, or nuclear (CBRN) attack. WorldReach proposed to improve the provision of emergency medical treatment at the scene of an emergency once threat assessments had been made and immediate security requirements had been met.



First responders provide feedback

### Focused on First Responders

Software and engineering experts at WorldReach began by identifying a gap in the standard, paper-based triage solutions that currently exist in the field. In the event of a high-impact incident with mass casualties, the goal of triage is to maximize the number of patients who will survive the incident by rapidly identifying, categorizing, and sorting casualties according to the severity of their injuries. Yet traditional methods of collecting and communicating information can lead to delays, confusion, and panic, as ambulances are rerouted in transit and relief agencies are unable to answer the questions of anxious relatives.

To enable first responders and medical caregivers to work as effectively and efficiently as possible, WorldReach put together a team that included the Human Oriented Technology Lab at Carleton University, the Ottawa Heart Institute, and the National Research Council to develop and design the RTMW. The team applied a user-centred design process to the design of the interface. With input from first responders and acute care and triage experts, the team conducted a needs assessment that focused on how the system would be used, who would be using it, the conditions under which it would be used, the tasks required, and the anticipated workflow. The result is a system that was designed to be rugged, easy to

set up, and simple to use. As project manager Dr. Laura Brown of the National Research Council says, "The work with first responders and emergency response groups was one of the keys to its success."



Testing the system

## A Portable and Compatible System

The RTMW features two major components: a portable component used in the field and a stationary central database accessible through the Internet, including wireless access. The software is bilingual, has the capacity to add any language, and includes online help and support documentation. The RTMW uses standard Windows-based PCs to maximize its economic viability.

The RTMW provides multiple users with simultaneous access to the central database to track casualties and status details. This enables first responders to maintain an organized flow of communication while improving a hospital's preparedness for the flow of casualties that may arrive. One of the RTMW's key benefits, notes Dr. Brown, is its adaptability to many disaster scenarios. The RTMW can be used at any disaster imaginable on any scale, from one to one hundred thousand or more casualties. "The RTMW answers a need to capture, coordinate, and disseminate medical information in the event of mass casualties,

regardless of whether it's caused by a terrorist event or a natural disaster, such as an earthquake," she explains.

## A Revolution in Medical Triage

According to Dr. Brown, the web-based information system represents a revolution in medical triage. "The instantaneous availability of the information provided by the RTMW and the capability of sharing it with all the people involved in a disaster is a tremendous benefit to the triage process in a CBRN or other mass casualty disaster."

With work on the RTMW complete and the project team in discussions with several municipalities to integrate the system within their emergency response plans, that revolution looks set to begin. WorldReach has made the RTMW commercially available through its Crisis Management product suite, and with a view to continuous improvement, the team is looking for new funding to expand the RTMW's capabilities to make it still more useful to emergency planning teams.