

Hooked on Helping: Richmond Ambulance Authority Serves as EMS Model

By Joanne Neuber

At 9:30 pm, a resident in one of the high-crime areas of Richmond, Virginia calls 911 for emergency assistance following an assault by a robber. The call is sent to the Communications Center at Richmond Ambulance Authority (RAA), where a paramedic immediately begins first aid instruction with the caller. Meanwhile, another communications officer sends a radio message to an RAA ambulance situated near the crime scene. In under two minutes the ambulance arrives while the assault victim is still receiving "telephone triage" medical help from the communications officer.

RAA maintains one of the best emergency response times in the United States, responding to over 92 percent of all 911 calls under the eight-minute requirement stipulated by the city of Richmond. To learn about Richmond's EMS efforts firsthand, partners from AIHA's EMS Training Centers in Vladivostok, Russia and Ashgabat, Turkmenistan spent two weeks training with RAA in March. While in Richmond, NIS partners learned about RAA's model for targeting response to areas most in need of EMS services, particularly those with high crime rates.

Despite its quick response time, even eight minutes is a long time for a city facing the second-highest per-capita homicide rate in the country, says RAA Director Jerry Overto, who has been working with city authorities to refine the RAA medical priority dispatch system.

Total crime in the city of Richmond, from thefts to homicides, dropped in 1996, from 20,575 incidents in 1995 to 19,109, according to Richmond Police Department statistics. Yet, notes Overton, crime is still significant, and places a high demand on the city's 24 advanced life support ambulance units.

But paramedics at RAA like Rich Pertgen don't let the high crime figures hamper their work. Says Pertgen, senior communications officer at RAA, "it doesn't matter, because you realize that your efforts could save a life. When you get the EMS bug, nothing else matters—you're hooked."

EMS teams in the NIS and US share that commitment to providing emergency response, no matter how adverse the conditions, Pertgen said. They also share a growing need to respond to people hurt in assaults.

EMS teams throughout the NIS are dealing with a rise in violent crime that has put extra strain on these nations' crumbling emergency medical service centers.

In the Russian Federation alone, the level of homicide and aggravated assault has increased dramatically in the post-Soviet era, accounting for more than half of the 2.7 million crimes recorded in 1993 and representing a 33 percent increase from 1992, according to a report by the Russian Internal Affairs Ministry. This presents new challenges to undersupplied ambulances and hospital emergency rooms, which are increasingly filled with victims of bullet and knife wounds.

"We have a job to do—to provide the best possible care at any risk," says Dr. Yusip Orazov, director of the Tiz Komek EMS Center in Ashgabat, Turkmenistan, which opened on March 27.

Because the Vladivostok EMS Center has been open since 1994, and its personnel spent more time at the training looking at ways to improve response, based on Richmond's successful track record. The demands placed on Vladivostok's emergency medical teams are especially

difficult, due to the region's sharp decline in energy production that prompted power cuts across the region and blackouts for up to 12 hours a day last year.

"We have problems with our communications system right now...for example, when the first line is busy, the second line can't always get through," says Ilya Pautov, computer programmer for the Vladivostok EMS Center, which signed a partnership agreement with RAA in 1994 to initiate pre-hospital emergency instruction to the city's first responders.

Dialing the 03 emergency telephone number is just the first challenge for many residents of Vladivostok and throughout the NIS. Often patients wait 20 minutes for an ambulance as it fights through the gridlock of traffic on the city's only major highway to outlying residential areas.

Vladimir Kouznetsov, director of the Vladivostok EMS training program, says he hopes that adaptation of Richmond's medical priority dispatch system will improve response times and quality of care administered to patients in a city of 650,000 .

While in Richmond, the Vladivostok team observed the bustle of activity at RAA's Communications Center, where three senior communications officers were handling all emergency calls for Richmond's 210,000 residents.

"It's like a big chess game," explains Pertgen, pointing to the large maps in the central dispatch room at RAA to show his Russian and Turkmen colleagues how ambulances are positioned in six strategic locations throughout the city. "We also have traffic jams, especially during the business day, when we can see upwards of one million people in the city," he says.

Relying on historical data, Pertgen knows that the probability of an auto accident occurring on the interstate highway at 5 pm on a Friday is greater than earlier in the day, and places ambulances in those regions situated closest to high accident areas. Ambulance reserves are stationed at RAA in case they are needed to respond to major incidents.

The Vladivostok partners are developing a patient information system similar to Richmond's to allow dispatchers to provide phone triage and ambulance dispatch. Vladivostok partners also hope to adapt a system of call prioritization, which relies on 32 chief complaints, such as cardiac arrest, choking and childbirth, to provide continuous telephone triage and to determine the severity of the call.

"The new system will be a very simple program, but it will serve as the foundation to measure results of the impact we're making at the EMS training center," says Kouznetsov.

The computerized dispatch and patient care program is being tested in the small town of Partizansk, 200 kilometers northwest of Vladivostok. With its introduction, the Partizansk EMS system will become the region's first computerized medical dispatch and patient care system.

Pautov's adaptation of the Richmond computer program relies on computerized Russian-language forms that prompt communications officers to record all major patient information, including the medical complaint, vital signs and severity of injury. The system then instructs the officer on ways to provide "phone triage" on basic life support techniques such as CPR, while an ambulance is simultaneously dispatched to the scene.

"Earlier, our dispatchers at the EMS centers would ask a patient three questions—name, address and sex—and then terminate the call and the possibility of saving a life," says Pautov, who designed the computer system with Pertgen.

Since Partizansk is a much smaller town than Richmond, it will modify the zoned system of ambulances. But the concept behind the system—which enables dispatchers to use computers to determine where crimes and injuries are most likely to take place, as well as the most efficient ambulance routes—is still important, Pautov says.

"We're hooked," Kouznetsov says, referring to both the innovations slated for his EMS system and his team's dedication to EMS as a profession. "We want to have a system like Richmond's that can serve as a similar model... for the rest of Russia."

Preparing for Disaster

On a Monday morning in March, EMS team leader Yusup Orazov, MD, was summoned to the scene of a factory carbon monoxide poisoning in Richmond, Virginia. Rushing up to his incident commander, Robert Hamilton, a senior communications officer at Richmond Ambulance Authority, Orazov learned that ten people were inside with various levels of exposure to carbon monoxide, an odorless, colorless gas that can cause dizziness, fatigue or death when inhaled. With no time to spare and only four available ambulances, Orazov ordered the removal and treatment of patients according to the international color triaging system and configured a disaster plan to transport all priority patients to nearby hospitals first.

This mass casualty disaster was only a drill. But it closely resembled "the real thing, when you must be prepared for anything to happen," said Orazov, who serves as the director of the EMS Training Center in Ashgabat, Turkmenistan.

Orazov and three of his colleagues from the Tiz Komek Emergency Medical Service Center in Ashgabat participated in the mass casualty drill with Vladivostok colleagues. A challenging part of the drill was ensuring safe EMS team access to the accident, Orazov noted. "We must do the greatest good for the greatest number of people, while ensuring our team's safety," he said.