

LOCAL & STATE, A5

GOP activist to join Senate race



SPORTS, B1

Hawks net another title

NATION & WORLD, A3

Fort Hood suspect's militant links examined

CONCORD MONITOR

MONDAY, NOVEMBER 9, 2009

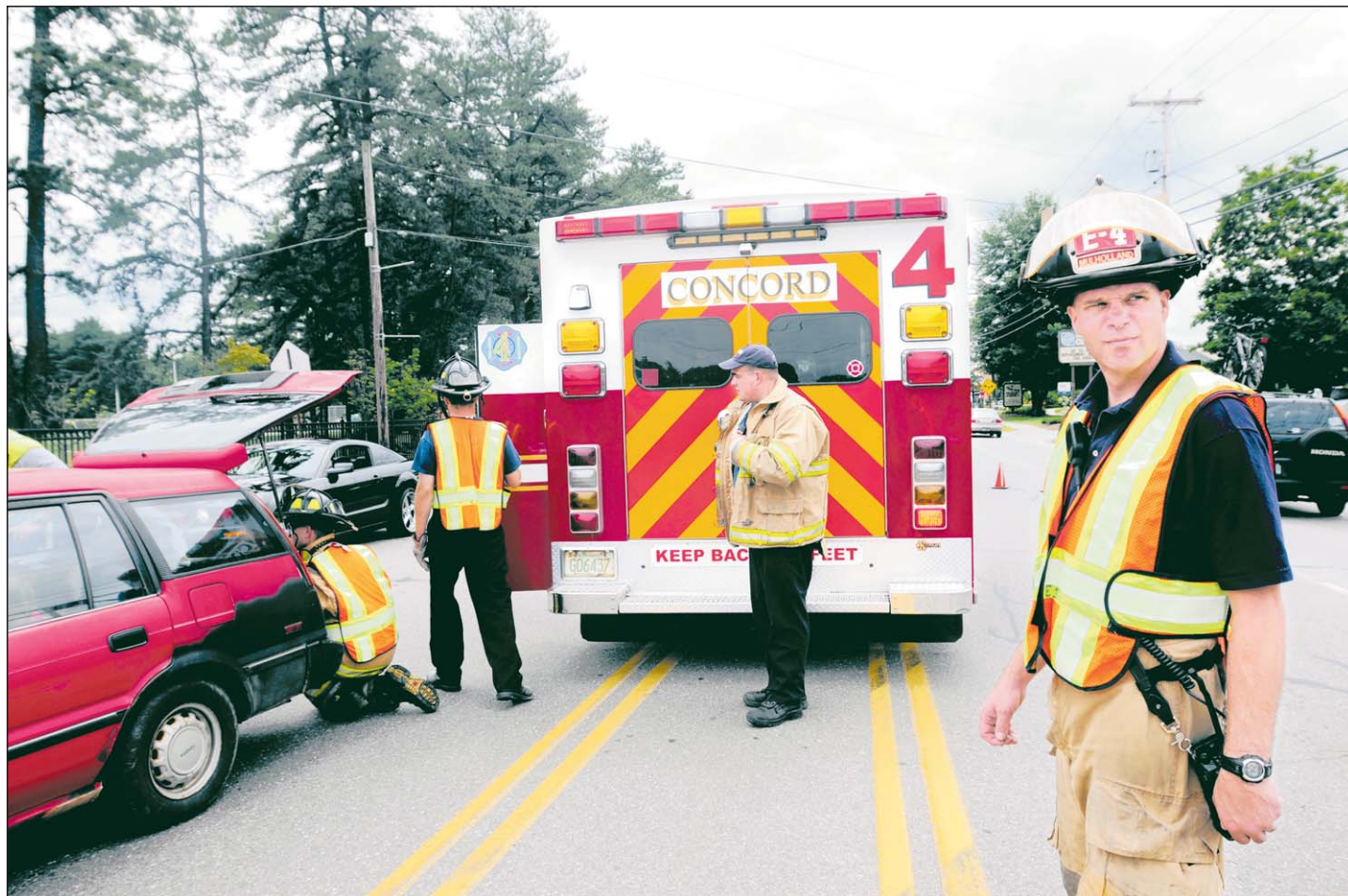
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CONCORD, NEW HAMPSHIRE

75¢

TIMETO RESPOND

Research challenges widely held belief that the quicker an emergency crew arrives, the better the patient's chances



JOY LEWIS / Monitor staff

Broadway Fire Station paramedic Lt. Keith Mulholland (right) responds to a motor vehicle accident on Loudon Road along with Mike Johnson (center) in Concord in July. Several studies question the importance of EMS response times.

By MARGOT SANGER-KATZ
Monitor staff

In 2002, emergency medicine specialists at the Denver Health Medical Center wanted to find out how much response times affected the survival of the major trauma patients they treated — often the victims of car crashes, gunshots and stabbings. They treated the kind of patients for whom every minute — they thought — would matter.

But after studying two years' worth of their hospital's major trauma cases, the researchers found no effect. Patients who arrived at the hospital quickly fared no better than those who took longer to reach the emergency room. Confused by this result, the specialists widened their analysis to look at all the patients who came to the city's emergency rooms by ambulance. Again, the data showed, response time didn't matter. They looked at patients with heart attacks, respiratory problems and other life-threatening health emergencies. None found a correlation between response time and survival.

"It's a patient satisfaction and public relations issue, but

in terms of patient outcome," said Dr. Vincent Markovchick, who worked on the studies, "a very rapid response time makes no difference."

As municipalities in New Hampshire and nationwide have made efforts to improve the quality of their ambulance services, they have often looked to their response times as the best measure of performance. The federal government has set an eight-minute response time target that fire departments and rescue squads endeavor to meet, often at great expense. Response time is an easily measured, intuitive proxy for the quality of EMS care. But though research in EMS is limited, no major published studies refute the Colorado results. According to Markovchick, there's simply no science that supports the national standard.

"The eight-minute standard is a very arbitrary number that was established 20 or 30 years ago," Markovchick said. "It was a guess."

EMS is less than 40 years old, and it has developed without a lot of scientific guidance about best practices. For years, states failed to gather comprehensive information about sys-

INSIDE: Meet a few of the people who serve on the front lines in an emergency. **A2**

ONLINE: Check out an interactive graphic comparing rescue squads, as well as source documents: concordmonitor.com/rescuesquad

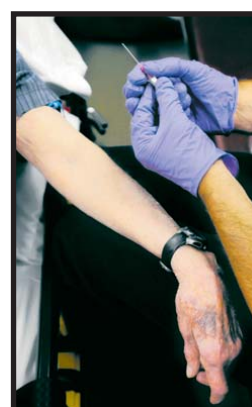
tem performance.

The latest research makes it difficult to know what investments will have the best payoff for communities hoping to improve their pre-hospital care. Studies show not just that expensive response time improvements may have limited benefit but also that investing in paramedic-level care may not be cost-effective.

The federal eight-minute response time target was built around one particularly life-threatening emergency: sudden cardiac arrest. For patients who suffer from

See **EMS — A2**

THE RESCUESQUAD



Emergency medical services across New Hampshire

PART TWO OF THREE

Yesterday: How local rescue squads compare.

Today: What science shows about how to build the best EMS system.

Tomorrow: The North Country's experiment in regional cooperation.

CONCORD

Ice rink upkeep to have weekends off

Donations sought to fill in budget cut

By MADDIE HANNA
Monitor staff

The White Park pond and rink, for decades an ice-skating haven and home to count-

less pickup hockey games, won't be cleared as often this winter — unless people are willing to pay for it.

To cut costs during this year's especially tight budget, the city decided to stop paying workers overtime to keep the pond and rink clear of snow on nights and week-

ends. The same goes for the pond at Merrill Park in East Concord.

"If it snowed on a Friday, the snow would not be removed until the following Monday," said the city's recreation director, David Gill. "The concern is, when

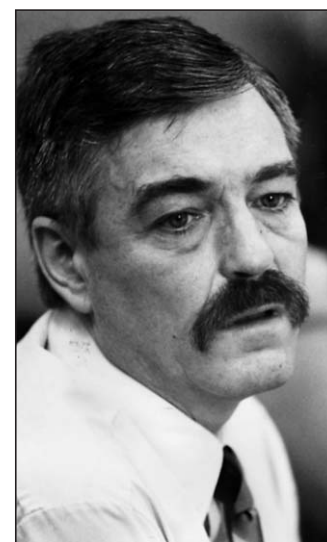
you get a heavy snow . . . you may lose the surface for several days after."

The city also won't open the White Park skate house, which allowed people to rent skates on the cheap and doubled as a warming hut.

See **ICE — A10**

CONCORD / HENNIKER

Murderer seeks a second parole



Monitor file

Clifford Avery, shown at a 1993 parole hearing, is again seeking parole.

Rape charges led to reincarceration

By ANNMARIE TIMMINS
Monitor staff

A murderer serving a life sentence who was paroled once until he was accused of child rape in Henniker in 1990 is seeking his freedom a second time.

Clifford Avery Jr., 63, will go before the parole board Thursday.

Avery is eligible for parole because in 1975, when he was convicted of first-degree murder, a life in prison sentence was 18 years.

But his parole is not guaranteed. Avery will have

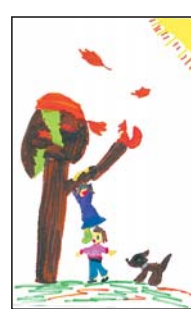
See **AVERY — A4**

CONTEST

Win an island vacation, a spa treatment and a trip to outer space

Just by reading the paper! See details on page **A9**

UNNAMED diplomats say Iran is willing to send 1,764 pounds of enriched uranium abroad to be exchanged for fuel for a medical reactor. **A4**



SUNNY Mild today, high 68. Cloudy tonight, low 44. Amanda Fleury, 9, of Allenstown draws the day. **A10**

Classified **B6**
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EMS Continued from A1

cardiac arrest, every minute that passes until their hearts are shocked back into rhythm dramatically decreases their chances of survival. In the 1970s and '80s, studies suggested that if personnel could reach cardiac patients within eight minutes, they could save many of them.

The latest thinking is that for patients to have a decent chance of meaningful survival, they really should be shocked within four minutes of when their hearts stop beating. And that's not four minutes from when the ambulance is called; it's four minutes from the beginning of the event. Those cases represent less than 1 percent of all 911 calls. And overall, survival from this type of heart attack is less than 5 percent.

Most rural ambulance services have already dispensed with a four- or eight-minute standard. In a densely populated city, it's possible to keep drive times short by spreading ambulances around. When it takes 10 minutes to drive from the fire station to the edges of town, a one-ambulance community will necessarily take longer to reach some patients.

"I know people would like to see it quicker, but from a safety perspective, I don't know how much faster you'd like to see them driving," said Epsom fire Chief Stewart Yeaton.

But how long is acceptable? Should a volunteer department with a 15-minute response time invest in full-time staff to cut that number down to 12 minutes? The answers are hard to come by.

Most ambulance calls are for minor medical conditions where experts say a taxi ride would serve just as well. Patients with sprained ankles, broken wrists or kidney stones may prefer medical care right away, but a few minutes won't change their prognosis.

But there are certain medical conditions where EMS and emergency room doctors say they know minutes matter. In trauma cases, doctors talk about the "golden hour" in which a patient should reach an operating room at an appropriate hospital. (Despite the wide use of the term in the emergency medical community, studies have also failed to show any proof that an hour is a critical time – most trauma patients who die do so either more quickly or more slowly.)

Other time-sensitive emergencies, experts say, include strokes, respiratory distress and severe allergic reactions. But medical research has yet to establish firm standards for how long those patients can wait before it's too late to save them.

Several researchers said they doubt a few minutes of improvement on a rural response time would make much of a difference.

Locally, nearly every large municipal EMS department boasts paramedics on every ambulance. But research done by Dr. Ian Stiell and others involved in the large scale Ontario Prehospital Advanced Life Support studies suggests that it takes careful training and use of medics to show a benefit to patients.

Stiell's research, which is ongoing, initially showed no benefit to medic care when it looked across the range of health emergencies. But as he drilled down to particular kinds of care, the findings were different.

In cases of respiratory distress, patients had higher survival rates when they had access to advanced life support.

In trauma cases, their rates were lower. "That was kind of disturbing," Stiell said.

Cardiac patients did about the same no matter who treated them. What mattered, Stiell said, was whether they were treated with CPR and a defibrillator quickly.

Paramedics are trained to perform myriad treatments that basic EMTs can't do: They can administer drugs, insert breathing tubes and start IVs. Those skills can benefit a patient who needs the right kind of speedy care, but only if the medic also has the judgment to know what treatment to offer and the skills to do it right.

"They can put the tube in, but that's only a tiny part of it. The sort of cognitive skill of when to put it in, that's far more important," Stiell said. "Just because you know how to put it in doesn't mean that's what you're supposed to do."

An error, either in judgment or technique, while performing advanced life support skills, can have catastrophic consequences. "At the basic level, it's pretty difficult to kill someone. At the medic level, it's pretty easy," said Weare EMS Capt. Bob DeStefano, who recently completed paramedic training.

Just as surgeons drive down

On the clock

Federal guidelines recommend that ambulances arrive at a patient's side within eight minutes of a 911 call. But recent research shows that emergency responders need to treat certain cardiac arrest patients within four minutes. Beyond that, most large studies don't show a strong relationship between response time and patient survival rates.

TOWN	NUMBER OF CALLS	LESS THAN 4 MINUTES	LESS THAN 8 MINUTES	90 PERCENT OF CALLS IN UNDER
ALLENSTOWN	420	21.2%	71.2%	12 minutes
ANDOVER	138	2.9%	8.0%	>20 minutes
BARNSTEAD	213	18.8%	56.3%	14 minutes
BELMONT	756	18.3%	61.6%	12 minutes
BOSCAWEN	470	10.6%	34.5%	17 minutes
BOW	548	31.6%	69.3%	12 minutes
BRADFORD	174	1.7%	20.1%	>20 minutes
BRISTOL	295	34.6%	77.3%	12 minutes
CANTERBURY	322	4.7%	23.0%	>20 minutes
CHICHESTER	317	8.2%	35.6%	17 minutes
CONCORD	4,898	26.1%	84.9%	9 minutes
CONTOOCOOK	97	24.7%	46.4%	17 minutes
DANBURY	138	1.4%	13.8%	19 minutes
DEERFIELD	396	8.1%	22.5%	>20 minutes
DEERING	137	1.5%	5.1%	>20 minutes
DUNBARTON	132	3.8%	22.0%	17 minutes
EPSOM	377	18.0%	62.6%	14 minutes
FRANKLIN	1,297	24.1%	84.4%	9 minutes
GILFORD	750	16.4%	56.9%	12 minutes
GILMANTON	219	9.1%	27.9%	17 minutes
HENNIKER	463	13.6%	41.5%	18 minutes
HILL	35	2.9%	5.7%	18 minutes
HILLSBORO	588	14.6%	39.8%	17 minutes
HOPKINTON	315	23.8%	53.3%	15 minutes
LACONIA	2,248	24.9%	87.1%	9 minutes
LOUDON	484	16.7%	44.6%	17 minutes
MEREDITH	916	16.4%	62.8%	13 minutes
NEW LONDON	483	16.4%	65.6%	12 minutes
NEWBURY	330	3.6%	18.2%	>20 minutes
NORTHFIELD	354	24.9%	68.1%	12 minutes
NORTHWOOD	313	6.4%	38.0%	18 minutes
PEMBROKE	525	26.7%	67.2%	13 minutes
PENACOOK	574	35.4%	82.2%	11 minutes
PITTSFIELD	554	31.9%	79.8%	10 minutes
SALISBURY	66	9.1%	19.7%	>20 minutes
SANBORNTON	228	3.9%	13.2%	>20 minutes
SUTTON	270	9.3%	30.4%	19 minutes
TILTON	853	26.1%	77.4%	11 minutes
WARNER	434	4.8%	31.6%	19 minutes
WEARE	425	4.0%	19.5%	19 minutes
WEBSTER	128	0.0%	10.9%	>20 minutes
WILMOT	88	8.0%	22.7%	>20 minutes

NOTES: The response time data is not comprehensive. A state analyst eliminated cases where patients were transferred from one facility to another; 911 calls where the ambulance was canceled en route; and "special cases," where the results were more than three standard deviations from the average number. This means that some departments may actually be slower than the above numbers suggest.

Source: New Hampshire Department of Safety, Trauma and Emergency Medical Services Information System, 2007-2008.

CHARLOTTE THIBAUT / Monitor staff

their error rates the more frequently they perform a particular operation, paramedics have been found to be better at assessing critically ill patients and administering paramedic-level treatments the more often they do it. In rural settings, that level of experience can be difficult to maintain.

Rich Serino, the deputy administrator of FEMA, who until recently ran Boston EMS, said Boston's department thought carefully about the best way to use paramedics. Instead of putting a medic on every ambulance, he said, they opted to put one in every fourth ambulance. Basic EMTs respond to every emergency, and the paramedics back them up when they are needed.

Serino said the system, which has become a model, saves the city the expense of staffing as many medics, who command higher salaries because of their training. He said it also ensures the medics on staff see enough tough cases to keep their skills sharp.

Researchers and municipal EMS directors talk about the design of an overall EMS system – not reliance on any one measure – as the key to providing the best care to patients in trouble.

They all agree that staffing ambulances with skilled EMTs who could provide a reliable, predictable response was important. But they also agree those systems worked better on larger scales, where it was possible to measure outcomes and maximize EMTs' exposure to a variety of calls.

They pointed to a parallel

body of research suggesting an ideal system can go beyond ambulances, particularly when it comes to cardiac patients. In recent years, manufacturers have developed automatic external defibrillator machines, or AEDs, that can be used by the lay public and work just as well as an EMT's paddles.

Markovchick said expanding the use of these machines could make a real difference in cardiac arrest survival. Put them in police squad cars, school gymnasiums, nursing homes and malls, he said, and teach people to use them.

One large study supports this approach. In Las Vegas, casinos collaborated to train all their security guards in how to use AEDs. By 2000, the survival of people stricken with cardiac arrest in the casinos improved to 53 percent of all cases – better than the survival rate for patients in hospitals – according to a study in the *New England Journal of Medicine*.

The city of Seattle encouraged community members to learn how to use AEDs and ensured that every high school student took a CPR course before graduation. A recent study showed that Seattle may be the best city in North America in which to suffer cardiac arrest – the city outperformed nine others in a study published in the *Journal of the American Medical Association*.

In rural areas, expanding access to CPR and defibrillators makes particular sense, experts said. "Anybody can do CPR," said Sue Prentiss, New Hampshire's EMS chief. "It doesn't take an EMT to do it. Anybody can use a defibrillator."

THE SQUAD MEMBERS

A look at the lives of those who work on the front lines of emergency care

BEN RAYMOND

Ben Raymond was running on energy drinks and adrenaline. Canterbury's first full-time firefighter/EMT, Raymond, 23, had spent the previous night fighting two fires in his hometown of Milford, where he still volunteers for the fire department. He had come straight to work from the scene of the second fire and arrived a few minutes early for his 7:30 a.m. shift in Canterbury.

Just in time to respond to an emergency medical call of an elderly woman having trouble breathing.

Things calmed down about 8:30, when he was able to sit down and fill out the state report for the medical call. With his desk clear, he settled in to study for the final exam in his EMT-Intermediate certification course, scheduled for that night. His study plan had been thrown off by the fires the night before, and he hoped to fit in some reviewing between his tasks at the station.

"I wear a big hat and do a lot of different things," Raymond said. "Full-time guys are always doing something –



training, cleaning, public education."

The switch to full-time coverage is still new to Canterbury, but Capt. Jon Camire said he can see positive changes. Camire said the town conducted a yearlong study and determined that a full-time person was necessary because the department's biggest problem was getting enough responders to the scene. Many area towns, including Hillsboro, are making the switch to full-time daytime coverage as it gets more difficult for people to volunteer. As for Raymond's sleepless night, Camire said

it is not typical and he always expects Raymond to be able to function safely and properly when he is at work.

"I understand his commitment to the town where he lives, and that's what he has to do," Camire said. "We hired him because of his training level, his experience as a full-time firefighter in Milford last year and, most important, his good people skills."

Raymond did not do as well as he had hoped on the EMT final that night, but he retook the test after a good night's sleep and passed with 11 points more than he needed.

COURTNEY ORDWAY

As a nursing major at the University of New Hampshire, Courtney Ordway hated the sight of blood. So she traded in her scrubs for Shakespeare and became an English major, but she never shook her desire to enter the medical field.

Working a public relations job for a hospice, Ordway was inspired by the nurses she encountered during her day job and decided to take an EMT class just to see if she would like it.

"I thought I wasn't doing enough with life," said Ordway, 33, of Warner. "A lot of my friends were EMTs, so I decided to get my EMT license and joined Warner Rescue."

She said she found it empowering to be calm and disconnected from a situation to help people, like on one emergency call she responded to when someone was having a panic attack.

This winter will mark her sixth year volunteering in Warner, but Ordway is no longer a volunteer dissatisfied with her day job. She found so much meaning in helping people as an EMT that she decided to go back to nursing school and earned her degree from NHTI two years ago, after "getting over the idea of seeing blood."

These days, Ordway works as an interventional radiology nurse at Dartmouth-Hitchcock Medical Center in Lebanon. She enjoys building relationships with the patients and "the amazing people you meet."

Despite her busy nursing schedule, she still volunteers with Warner Rescue. Her favorite calls are the traumas, although those are few and far between, she says.

"A lot of the stuff we get isn't necessarily life-threatening.



People just really need you for that moment," Ordway said. "There is the medical component and a reason for you to be there, but a lot of time it seems more like emotional support."

Ordway is not the only nurse involved in emergency medical care, but Sue Prentiss, chief of the state Bureau of Emergency Medical Services, thinks that more nurses could easily get involved and don't know it. Prentiss said nurses receive EMT training while in school, meaning they would need to

take only a 24-hour training program and a written and practical exam to become a licensed provider, as opposed to the longer training for those without medical backgrounds.

Aside from her support of individual patients, Ordway said her work on the rescue squad has strengthened her bonds with the community.

"You drive down the street and inevitably see someone who will wave to you," she said. "You are just a part of something bigger than yourself, which is a neat feeling."

JESSICA WHELEHAN

Jessica Whelehan thrives on stress and responsibility, priding herself on her perfectionism and cool head in difficult situations. Perfect qualities for someone who answers hundreds of calls each day as a state 911 dispatcher.

"I like knowing that everyday people, whether it is the public, my co-workers or supervisors, can depend on me and that I am going to perform to the best of my ability," said Whelehan, 26.

Whelehan, of Concord, was named the 2008 Emergency Medical Dispatcher of the Year for her performance on 911 calls. The dispatchers are graded on strict guidelines for each call and must maintain a high average.

Whelehan said not everything is scripted but there are criteria about what questions dispatchers ask and in what order, and they will lose

points if they ask unnecessary questions. She also stressed the importance of good customer service, no matter how rude or distressed the caller is to the dispatchers.

"I'm always aiming for the 100 percent and put the ultimate pressure on myself to get that," she said.

The statewide dispatch centers, located in Concord and Laconia, take 911 calls and forward the information to the appropriate local agency responsible for sending out fire trucks, police cars and ambulances.

Whelehan said she takes calls ranging from car accidents to domestic violence to fires to medical traumas and often worries that one day she will pick up the phone

and find a family member or friend on the other end of the line. One call she answered was about a man she knew who ultimately passed away.

"I performed well on the call because that's my job, but I was a wreck afterwards, of course," Whelehan said. "It was a matter of making sure I gave them 100 percent of the help I was capable of."

She said that dispatchers must do the best they can with the information they are given by the caller, which is not always accurate. And Whelehan must detach herself from the calls because most of the time, the dispatchers never know what happens to the people they are trying to help. Once the ambulance gets there, their job is over.

"We don't get any closure on calls, unless we know the person," she said. "We have to be ready to take another call the second we hang up."

Profiles by MAURA SULLIVAN
Photos by JOY LEWIS