A NEW RESPONSE

Supporting paradigm change in EMS’ operational medical response to active shooter events

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The tragedies in Aurora, Colo., Newtown, Conn., and most recently at the Navy Yard in Washington, D.C., add to the growing epidemic of mass killings in our society. Such events have brought to light the real risk—and absolute horror—of what law enforcement and Fire/EMS responders must be prepared to face. These events have spawned initiatives and opened conversations at high levels of government that used to be non-starters, and the prospect of change and progress in the legislation to control illegal access to lethal weapons and improve mental health resources has the most realistic chance of being enacted in several years.

Yet among all the rhetoric for new regulations, there’s only now dialogue regarding the operational medical response to these events about how and where improvements and progress can be made. Although the law enforcement tactical response paradigm changed after the Columbine High School massacre in 1999, fire/rescue and EMS operations have been slow to change from the historical stage-and-wait for safe operations approach.

LEARNING FROM HISTORY

The historical perspective on mass killings and active shooter incidents is overwhelming. According to a December 18, 2012, USA Today report, 774 people were killed in mass shootings from 2006–2012, including 161 children under the age of 10. The frequency of these events is disturbing, and it certainly appears these attacks are occurring in increasing numbers and severity. In our post-9/11 disaster-aware public culture, local, state and federal governments are mandating facility response plans and drills, creating training programs for schools and businesses, and funding distributed education training, like YouTube videos on how citizens should respond to an active shooter or mass killing. However, only recently has funding been available and has any guidance been produced for the operational Fire/EMS response community.

The law enforcement community changed its response paradigm to active shooter and mass killing events after the tragedy at Columbine High School in 1999. Prior to Columbine, the standard law enforcement response to active shooters and mass-killing events was focused on the “five Cs”: contain, control, call SWAT, communicate with the perpetrator, come up with a tentative plan. Based on the belief these events were actually hostage barricades where the perpetrators wanted something specific and didn’t have an intent to kill, the initial patrol response was to rapidly create a hard perimeter.
around the incident site, evacuate those who
could be easily evacuated, and establish com-
 munications with the perpetrators while wait-
ing for the special tactical response assets to
arrive. By the standards of the time, the law
enforcement response to the Columbine mas-
sacre was tactically correct. However, the resul-
tant negative public opinion and the strong
criticism by the Governor Bill Owens’ Colum-
bine Review Commission1 were drivers for law
enforcement response paradigm change.

Common sense, as well as law enforcement
research at the time, proved the rapid emer-
gency deployment model as an effective way to
limit “trigger time.” Essentially, without rapid
intervention, a single unchallenged shooter
could acquire, target and shoot a new victim
about every five seconds.2 Therefore, “time
taken by first responders equals casualties.”

As a result, since 2000, the accepted stan-
dard operational law enforcement response
to the active shooter is the rapid deployment
of the first-arriving patrol officers on scene.
These basic patrol officers, not highly trained
SWAT officers, immediately form two- to
four-man contact teams and move aggres-
sively to contain or eliminate the shooter.

What’s now being found with the rapid
deployment model is that these events are
ended very quickly by the aggressive response,
even if it the police response is only a single
individual.4 The majority of the perpetrators
either gives up or commits suicide at the first
sign of police activity.5 In fact, a recent report
on active shooter events showed that, on aver-
age, active shooter incidents are less than 12
minutes, with many as short as 3–4 minutes,6
and that, given the average 10-minute police
response, more than 93% of the incidents on
school campuses were finished prior to the
arrival of law enforcement.7

THE PARADIGM
The Fire/EMS medical response paradigm to
such events, however, hasn’t evolved to meet
this new threat. To note, there has yet to be
a true sentinel event in the public realm to
bring to light the shortcomings of the current
Fire/EMS approach; thus, the impetus for
change may not yet be at critical mass.

At the heart of the current Fire/EMS
response paradigm to active shooters is the
concept of staging assets off-scene and wait-
ing for operations to begin once the scene
is declared safe by police. This concept of
“Scene Safety” is one that is ingrained in all
Fire and EMS personnel from the earliest
stages of recruit school and operational train-
ing. Rightfully so, this paradigm has grown
through attempts to keep preventable injuries
and loss of life in responding personnel to a
minimum during operations that are typical
to the Fire/EMS service.

The rift comes when this paradigm is
applied to this new threat scenario, and the pri-
macy of absolute scene safety for first respond-
ers in lieu of mitigated risk acceptance comes
at the expense of the injured civilian.

MILITARY EXAMPLE
As with most changes in civilian operational
medical response, one can look to the U.S.
military combat medical experience for infor-
mation and examples. The paradigm response
for combat medicine over the past 15 years is
strongly evidence-based and hinges on plac-
ing medical care at the patient’s side within
“few seconds to minutes of wounding.”8

Historical combat medical data shows
that, in penetrating trauma, there’s a predict-
able death curve where the majority of those
with fatal combat injuries die within 30 min-
utes of wounding. In the Wound Data and
Munitions Effectiveness Team study after
Vietnam, it was concluded that, in combat,
42% of deaths occur immediately, 26% occur
within 5 minutes, 16% between 5–30 min-
utes, and 8–10% within 2 hours. In fact, only
10% of all the combat deaths in this study
occurred once medical care was initiated on
the wounded.8

This article further supports and expands on the idea that EMS
should be prepared for anything in the event of a mass shooter,
which was first talked about in the September article “Crosshairs
on EMS: Responding to MCIs caused by low-tech terrorism,” by
Eric Dickinson, NRAEMT, BS. For additional details on how EMS
responded to mass shooter incidents such as Columbine and the Virginia Tech Massacre,
as well as more information on operating inside hot, warm and cold zones, scan the QR
code or visit www.jems.com/crosshairs-on-ems.
what is considered to be one of, if not the, most dangerous professions. The same holds true for non-Fire EMS providers; A study from 2005 showed an average of 5,000 ambulance crashes per year, one paramedic killed and injuries in the thousands per month.

The Fire/EMS paradigm and the culture of Fire/EMS responders appear to only accept risk when responding to certain common operational scenarios, and to reject risk in the name of safety in other non-conforming scenarios. In reality, risk is risk and a line-of-duty death is both heroic and tragic regardless of the scenario in which it occurred.

Ironically, ‘acceptable’ risk in some normal operations is unnecessary given the solid evidence that shows there’s little if any benefit to those actions, while the ‘unacceptable’ risk in active shooter response is bearing out to be well less than what was imagined. In a study of those responding to active shooter events over 33 years, only four incidents were documented where first responders were killed or injured. More recently, there have been four significant responder injuries in active shooter incidents: Sergeant Kimberly Munley shot during the 2009 Ft. Hood response; Lt. Brian Murphy shot responding to the 2012 Sikh Temple shooting in Wisconsin, and during the initial response to the Navy Yard shooting this past September, both Officer Scott Williams who was shot in the legs, and a second un-named officer shot twice in the chest but protected by his ballistic vest.

This low number of injured responders is even more significant in that these were the law enforcement responders aggressively pursuing and engaging the perpetrator in the direct line of fire, not Fire/EMS responders working behind the contact teams in areas that have been cleared but not secured. To put it in perspective, during the same time period of the four most recent officers injured, from November 2009 to September 2013, over 269 line firefighters were not just wounded with uncontrolled injury increases the death rate, so rapid application of medical stabilization of the wounded is lifesaving. The primacy and effectiveness of this point-of-wounding care continues to hold true when reviewing all of the current combat medical data. Given this, in the current war on terror, the military’s operational medical emphasis is on training every combat soldier in simple basic lifesaving skills to be applied as soon as tactically feasible, followed by rapid evacuation to care. For example, the early application of hemostatic dressings, tourniquets and management of sucking chest wounds and tension pneumothorax is critical.

Although this military model may not be feasible in a civilian setting, the need for timely stabilizing medical care and evacuation despite ongoing operations should not be lost. As with the idea of rapid tactical police response, this seems to be relative common sense: the sooner the first responders initiate rescue and treatment of the wounded, the greater the chance that the victims will survive. EMS personnel in the forward warm zone and law enforcement personnel in the hot zones should be equipped with tourniquets, pleural decompression needle devices, and occlusive and hemostatic dressings.

**ASSESSING RISK**

The most common argument against Fire/EMS warm zone operations in active shooter/active killing scenarios is that "operating in an unsecured environment is too much risk for the responders to assume" and "scene safety is paramount above all other considerations." The amount of assumed risk in these active shooter scenarios is thought to be too high to accept.

However, because the greatest immediate threat to first responders in an active shooter scenario—the shooter—is rapidly incapacitated in almost all incidents prior to both police and Fire/EMS response, the true risk to Fire/EMS personnel operating in “clear” but not “secure” areas, so called warm or indirect threat zones, is very low.

Risk comes in many forms for the Fire/EMS service, and there’s an apparent conflict in the thought process that allows acceptable risk in some scenarios but not in others. It’s a well-known fact that there’s great risk to the well-being of the responder in every fire that is fought. Over the past 30 years, over 3,000 fire fighters have died performing
Understanding this human behavior, it becomes clear the risk of a delayed ambush amid an active law enforcement response is small and doesn’t even begin to outweigh the benefit of rapid rescue and medical care to the wounded. However, the possibility, no matter how miniscule, remains; thus, Fire/EMS warm zone medical and rescue operations should always be conducted with proper ballistic PPE and coordinated with law enforcement.

WORKING WITH LAW ENFORCEMENT

Because active shooter response at least initially belongs to law enforcement, some feel these responders should be responsible for evacuating the wounded to staged Fire/EMS assets. But law enforcement bears a heavy burden in this type of response. Officers are a limited resource and shouldn’t be required to be the only response asset to initiate rescue and medical operations. Even with a maximal response by law enforcement personnel, in a scenario with high numbers of casualties, the likelihood of having the required numbers to complete the immediate tactical objectives as well as stabilize and expeditiously evacuate the wounded is highly unlikely.

This means in systems where law enforcement or Fire/EMS rejects the idea of coordinated medical operations in areas of higher risk, seriously wounded but survivable victims could die while the primary tactical objectives are being addressed.

Additionally, unless specifically trained and carrying the proper equipment, the vast majority of law enforcement officers are unable to provide even basic medical stabilization of the wounded prior to evacuation. This means the injured victim who’s rapidly exsanguinating from a thigh wound will continue to exsanguinate during evacuation by law enforcement from the point of wounding to the “safe” area, even if it’s a secure internal casualty collection point where medical assets are staged.

The theater attack in Aurora demonstrated the need for forward-deployed Fire/EMS medical operations. Although not a criticism of the response, the fact is that there were not enough medical or rescue personnel in the warm/indirect threat zone soon enough after the attack and police officers had to switch from primary tactical response to rescue/medical. Half of the victims transported to hospitals that night were in the back of police cars.15

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The fact also remains that those injured victims received no medical care during transport, and that, with each police-initiated transport, there was one or two less law enforcement officers on scene to assist with completing tactical law enforcement objectives.

Having no medical personnel in the warm zone means that little treatment is being done for the wounded, and that stabilizing and often lifesaving care will be significantly delayed. In light of the available data discussed above and actual risk profile, over-adherence to a culture of absolute safety for responders will likely have a detrimental effect on the wounded survivors. The low risk of danger to the responder is clearly outweighed by the benefit for the patients.

The paradigm shift in operations in the London Fire Brigade (LFB) is a perfect example of high-risk medical operations. Highly criticized after the July 2005 attacks on the London Underground subway system, the LFB has adopted a more aggressive approach to operating in areas of higher risk that relies on real-time risk/benefit assessment by on-scene commanders.16 Despite official vindication in the Coroner’s Report,17 the public outrage of the response paradigm that kept responders from early rescue operations during the bombings forced this change. As such, in the years leading up to the 2012 London Olympic Games, London Fire Brigade researched international best practices and worked with their operational partners to develop and implement a new approach to high threat scenarios.18 The London Fire Brigade should be applauded for their current approach to indirect threat scenario operations including aggressive police/Fire integration for medical rescue and fire suppression.

WORKING WITH SWAT

But what about the tactical paramedics embedded with SWAT or other specialized response teams? Both Fire/EMS and law enforcement command often use the specially trained tactical medics as the answer/alternative to any calls for paradigm shift to initiate warm zone medical operations. These medics are trained to work in high-threat environments and, if immediately available, are exceptionally useful and appropriate for deployment in active shooter scenarios.

However, there are multiple issues with relying on tactical medics as the sole warm zone rescue/medical asset. First, in all but a few fulltime SWAT teams, tactical medics are part time and are therefore not always available. Even in full-time teams, because they respond as part of the SWAT package that has to be specially requested and assembled and is thus delayed in response, the on-scene time for law enforcement tactical medics will be slower than the first-responding Fire/EMS assets who are immediately deployed to the scene.

Second, tactical medics have a defined mission to provide medical support for the SWAT team officers; they certainly can initiate care
to the wounded, but as a whole, their primary mission is dedicated to the SWAT officers and the SWAT tactical mission, so they can’t initiate mass wounding care until the primary mission of the SWAT team is completed.

And finally, tactical medics are an extremely limited resource, with most teams only having at most two during any operation. Imagine the effectiveness and ability of only two medics to deliver timely care and rapid evacuation in Aurora, with 58 persons injured and 12 dead.

NEW STANDARD OF CARE
Another argument frequently heard against paradigm shift in the Fire/EMS response to active shooters is that indirect threat/warm zone care is outside the standard EMS protocols and, therefore, instituting such a paradigm would require a new standard of care and extensive training. Although care provided to the wounded in areas of mitigated threat requires a different approach than traditional EMS, this doesn’t represent a significant and expensive training mandate. Because it doesn’t require certification or proprietary medical courses, the implementation of the high-threat medical guidelines into medical operations can easily be developed on a local level or agency level.

The guidelines of Tactical Emergency Casualty Care (TECC), developed by a consensus group of civilian operational medical experts, represent simple evidenced-based and best-practices guidelines for care provided by any caregiver at or near the point of wounding during high-risk operations.17 In lieu of the standard EMS approach, TECC offers threat-based care guidelines that uses the relationship between the provider and the threat to define the minimum of what is medically needed for lifesaving. Developmentally, TECC is the civilian-appropriate, civilian-guided translation of the successful military Tactical Combat Casualty Care (TCCC) guidelines. Although TCCC has already been taught to civilians through a variety of training programs, it’s at its most basic a military doctrine of care. This creates significant issues when this military guidance is implemented carte blanch into civilian prehospital operations. TECC, on the other hand, is the direct civilian translation of TCCC, written by civilians for civilian use. TECC accounts for the aspects of the civilian setting and scope that doesn’t exist in the military, including, among other things, common operating language across disciplines, scope of practice, liability, special populations and baseline health of the population.18 It’s not dogma, and allows for differences among different levels of providers, different scope of practice, and different operational systems. The TECC guidelines are essentially a set of bricks with which agencies can build an operational response that is unique and individually tailored to their operations, scope and protocols.

The last argument against Fire/EMS response paradigm shift comes down to history. Despite good evidence and a healthy dose of common sense supporting it, the resistant Fire/EMS agency administrators often push saying, “Well, that’s not our incident and is just not the way we operate.”

It’s been said the Fire service is “200 years of tradition unimpeded by progress.” Although this is clearly not the case, there may be a bit of truth to the statement, and EMS as a specialty isn’t all that different. Fire/Rescue and EMS operations are based largely on apprenticeship-like training where we emulate what we have been told and shown by our superiors; this can lead to propagation of operations and procedures that are grounded in anecdotal experience, not evidence.

As a whole, human beings are uncomfortable with change. This natural resistance makes change slow and cumbersome, and requires time, patience and a lot of discussion. Change is never easy, especially when it addresses one of the earliest and most culturally entrenched ideas in operational response.

So, how should paradigm shift be addressed? The answer is to move forward with solid training, tactics and equipment to develop an operational paradigm that allows for medical operations in the setting of mitigated risk. The foundation for the paradigm must include all of the following: strong, well-developed and frequent training on the high-risk operations, the inherent risks and the mitigation strategies; sound tactics that are developed and vetted by the experts to allow for operations that reasonably mitigate the risk; and dependable user-friendly equipment that both assists in completing the task at hand and provides protection to give personnel confidence in their acceptance of risk. Solid training, tactics, and equipment will decrease the uphill climb that comes with overcoming operational inertia and, in the end, will help to ease the assimilation of new paradigm.

CONCLUSION
When closely examining the arguments against paradigm shift, the clearer picture of the need for change comes into focus in light of the evidence available on the true risk and operational restraints. A new Fire/EMS response paradigm for active shooters must be implemented.

During active shooter/active killing response, the first arriving Fire/EMS
responders, not special operations or tactical medical teams, must accept the responsibility for life rescue and medical operations and must work with first-responding law enforcement assets to rapidly deploy into the areas that have been cleared but not secured (warm/indirect threat zones) to initiate treatment and rescue injured victims.

These operations must be coordinated with law enforcement patrol officers providing security for these personnel during operations. Fire/EMS must have appropriate medical supplies and equipment and should be trained in some basic law enforcement movement/tactics. And, these Fire/EMS responders must base their treatments on the medical principles of civilian ‘Tactical Emergency Casualty Care’ to meet the situational standard for application of medicine in civilian high-threat scenarios.

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