

Integrated Response to the Dynamic Threat of School Violence

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Abbreviations:

CPR = cardiopulmonary resuscitation
EMS = emergency medical services
OMI = Operational Medicine Institute

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Abstract

A terrorist attack on US schools no longer can be considered a Black Swan event. Mounting evidence suggests that extremist organizations actively are targeting US schools. Equally disturbing are data suggesting that schools, universities, and communities are unprepared for large-scale violence. The Operational Medicine Institute Conference on an Integrated Response to the Modern Urban Terrorist Threat revealed significant variations in the perceived threats and critical response gaps among emergency medical providers, law enforcement personnel, politicians, and security specialists. The participants recommended several steps to address these gaps in preparedness, training, responses, and recovery.

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Introduction

School violence is a complex threat to our society. The broad-term definition of school violence encompasses bullying, fights, assaults, school shootings, violence from external sources, and terrorist attacks. Schools and school buses are “soft targets” (i.e., they have large numbers of children at the same locations every day of the week, have static, highly visible, and easily mapped operating procedures, and frequently lack significant physical security). According to the 2009 US Department of Education student census, 55.6 million young people attend more than 119,000 public and private schools where six million adults work as teachers and staff. An additional 18.4 million students attend this nation's two- and four-year colleges and universities.¹ Counting students, faculty, and staff, on any given weekday, more than one-quarter of the US population can be found in schools.²

Since 1966, the reported number of school shootings in the US has ranged from 45–600 (excluding gang related violence).^{3,4} This number does not include planned, attempted, or thwarted attacks. The wide range is largely the result of politics—for some, a “school shooting” must be conducted by a student or school-affiliated person. However, for some, any shooting on or near a school registers as a “school shooting.” This disparity illustrates the difficulty in identifying and counteracting potential threats to the children.

High-profile events, including those at Columbine High School (1999), the Amish school in Pennsylvania (2006), and Virginia Tech (2007) have resulted in transient outrage and calls for action, but minimal improvements have occurred in school security. For example, in response to the 1999 attacks in Columbine, the US Department of Education collaborated with the US Secret Service to draft and distribute a thorough and useful guide outlining the history of school violence. The booklet offered guidance in threat assessment and the deterrence of school shootings and provided important objective data that raised awareness of school violence. However, this retrospective review only considered student-on-student violence and only provided focused recommendations on student profiling and general violence prevention.⁵ While prevention is an

important component of risk reduction, it is not nearly enough. Since 2001, a new threat has emerged—a terrorist attack on US schools. Though some critics have argued that a terrorist attack on a US school is unlikely, there exists legitimate evidence and established precedent indicating that Al-Qaeda and affiliate groups are actively targeting American schools.^{6,7} A terrorist attack on American schools would have severe psychological, social, and economic consequences. Currently, many view a terrorist attack on a US school as a Black Swan event.

The Black Swan theory describes uncommon and difficult to predict events that have dramatic paradigm-altering impacts and are rationalized as “expected events” in *post-hoc* analysis.⁸ The Columbine attacks in 1999 and the 11 September 2001 attacks represent the most prescient examples of Black Swan events in recent crisis management history. Perceptions and expectations define this theory. However, given Osama bin Laden’s declaration that the current jihad will result in the death of two million American children, recent discoveries of Al-Qaeda operatives actively planning attacks on US schools, and the 2004 Beslan attacks, a terrorist attack on a US school no longer should be considered a Black Swan event.⁹

The purpose of the Operational Medicine Institute Conference (July 2009) entitled “Integrated Response to the Modern Urban Terrorist Threat” was to provide education for community leaders, create a forum for interagency discussion, and survey emergency medical providers, law enforcement personnel, politicians, and security specialists regarding their attitudes toward the current state of preparedness for large-scale school violence focusing on school shootings, sieges, and terrorist incidents. The results of the conference broadly confirmed a critical gap in preparedness, significant variation in threat perception, and a strong desire for increased training in counterterrorism, tactical medicine, and rescue and prevention techniques tailored towards responding to school violence. An “all hazards” approach to risk management is required to create a functional matrix for the preparation, planning, response, and recovery phases designed to prepare for school violence. Hospital-based medical personnel, emergency medical services (EMS), and law enforcement officers have vital leadership roles in implementing this approach.

Methods

The Operational Medicine Institute (OMI) undertook an examination of the responses to school terrorism events in the context of the traditional disaster response paradigm of planning, preparedness, responses, and recovery. The OMI, in conjunction with the Israeli Consulate of New England, hosted an international, multi-agency conference in Boston, Massachusetts on 17 July 2009. The conference, entitled “Integrated Response to Modern Urban Terrorism” was attended by law enforcement personnel (local, state, and federal), school police and public safety officers, EMS personnel (private and public), emergency physicians, emergency management specialists, private security consultants, local government officials, academicians, and members of the US military.

The conference was divided into two sessions: one open and one closed. During the open morning session, international experts in disaster response and counterterrorism lec-

tures to a wide variety of medical, law enforcement, and government professionals. The five 45-minute lectures included: “Understanding the Terrorist Threat—An Israeli Perspective”, “Terrorism Response—Focusing on the Families and Victims”, “Medical Intelligence in Urban Terrorism Response”, “Addressing the Dynamic Threat of School Shootings”, and “Forensics in Terrorism Recovery”.

Conference coordinators distributed a standardized questionnaire that included five questions related to baseline terrorism knowledge and threat perception, each with a five-point Likert-type scale. Respondents were asked to identify themselves as Law Enforcement, EMS, Fire, Military, Government, School Official, Academic, or Medical/Other (i.e., physician, nurses, and emergency management). Attempts were made to designate a primary specialty if one existed.

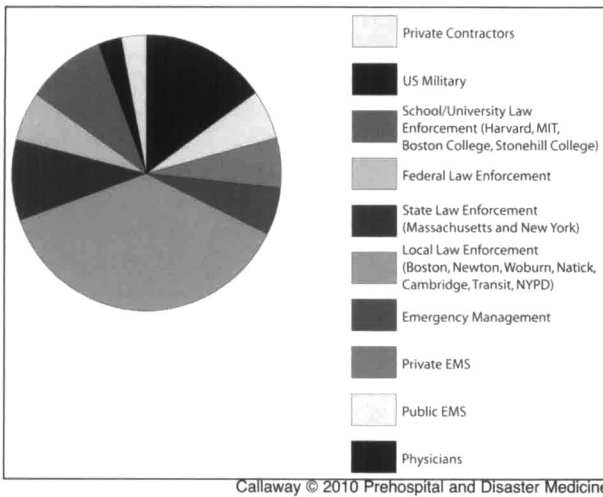
The second session of the conference was a three-hour, invitation-only, closed-door session. Thirty-one professionals from various agencies, specialties, and levels of command attended the session. Two medical personnel with experience in law enforcement, high-threat rescue, and direct action counterterrorism served as moderators for the discussion. The goals of the session were to: (1) briefly review the after action reports from recent school shootings (e.g., Columbine, Beslan, Virginia Tech); (2) critically evaluate current preparedness and response systems; (3) identify planning, preparedness, response, and mitigation gaps; (4) propose realistic solutions to close these gaps; and (5) identify roadblocks to successful integrated emergency responses.

In order to foster open and honest discussion, the group was briefed that all data would be aggregated and remain anonymous. The moderators informed the participants that a survey would be circulated within one week of the conference. On post-conference day number seven, a six-question, online survey (surveymonkey.com, Portland, OR) was sent via e-mail to participants. The respondents were asked to rank the three largest gaps in response capabilities, the three largest obstacles to closing these gaps as well as three steps to overcoming these obstacles. The responses were collated, grouped, and given weighted scores with the top response earning 3 points, second response earning 2 points, and the third response earning 1 point. Two researchers (DWC and ASR) collected the survey data, reviewed the responses, performed summary statistics and matched pairs analyses, and consolidated all comments and recommendations. For all tests, the statistical significance was set at 0.05. Descriptive statistics and confidence intervals (CI) were used to extract group characteristics. For continuous variables, the paired *t*-test was used. All calculation was performed with JMP 8.0 (SAS Corp, Cary, North Carolina, 2008).

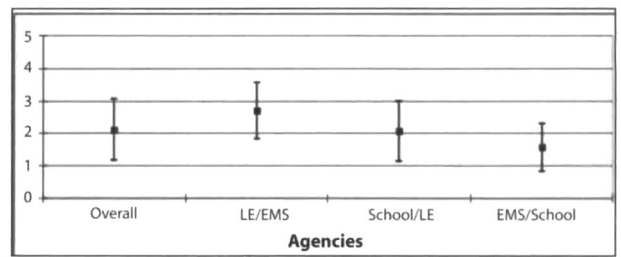
Results

Thirty-one professionals participated in the school shooting breakout session. Nine were primary medical personnel and 20 were primary law enforcement. Two personnel were listed as “other” (Figure 1). The survey was completed by 16 of 31 (51.6%) participants.

Assessment of Knowledge, Perception of Risk, and Interoperability
Participants rated their pre-conference awareness of school shootings and terrorism response as 3.56 ± 1.36 on a 5-point



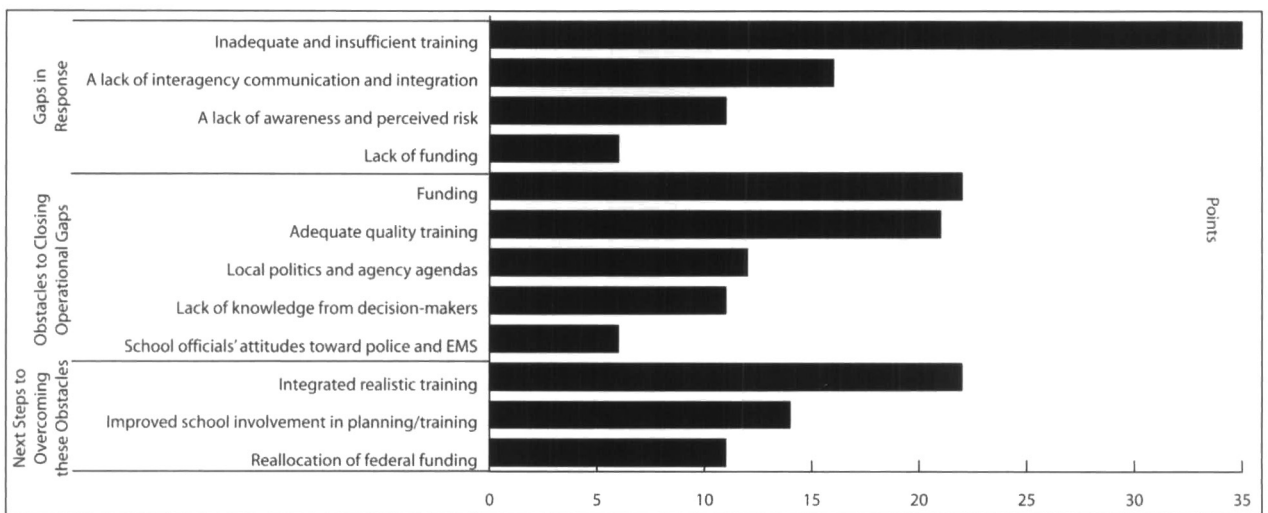
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Figure 2—Perceived interagency collaboration and interoperability (EMS = emergency medical services; LE = law enforcement)

Figure 1—Participant demographics



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Figure 3—Participant's perceived gaps, obstacles, and solutions

scale. The mean increase in self-reported knowledge was 1.13 points from 3.56 to 4.69 ± 0.48 ($p = 0.0037$) seven days after the conference. Given the above average pre-session knowledge for participants, this improvement suggests that the instructors were effective at presenting novel information to an already-experienced group of professionals.

Participants were asked to numerically rank their assessment of the risk of a terrorist attack on US schools. The mean of the pre-conference scores was 3.88 ± 1.02. The mean of the post-conference scores increased 0.88 points to 4.75 out of a maximum of 5 ± 0.45 ($p = 0.004$). Then, the participants were asked to numerically rate the government's, school officials', and general public's perception of the risk of a terrorist attack on primary and secondary schools. The participants ranked threat awareness in the other groups very poorly: government = 2.69 ± 1.01, public = 2.19 ± 1.52, and school officials = 1.94 ± 1.18.

The ability to plan, train, and respond in an integrated manner was a major topic of discussion in the breakout session. Participants ranked their perception of current interoperability and collaboration between law enforcement and

EMS as 2.69 ± 0.87, between law enforcement and school administrators as 2.06 ± 0.93, and between EMS and school administrators as 1.56 ± 0.73. Overall interoperability and collaboration was scored as 2.10 ± 0.95 (Figure 2).

Identified Gaps in Response, Obstacles to Closing Operational Gaps, and Steps to Overcome these Obstacles

The respondents were asked to rank the top three gaps in terrorism response planning and operations (Figure 3). The weighted responses suggest that integrated terrorism response capabilities were limited by inadequate and insufficient training (35 points). A lack of interagency communication and an integrated response were the second most commonly cited gaps (16 points). A lack of awareness and perceived risk rated fourth with 11 points. Lack of funding ranked last with 6 points.

The top two obstacles to closing the gaps in integrated terrorism response were funding (22 points) and training (21 points). Comments focused on the importance of integrated training, the need for reallocation of Department of Homeland Security funding to support training versus

Training and Awareness

- 70% of schools do not specifically train faculty and staff on how to recognize risk factors for students and employees who may pose a risk of violence
- 88% of schools have not conducted a vulnerability assessment of their campus
- One-third of the schools do not have a formal policy in place regarding what faculty and staff should do if they have concerns about a student or colleague who appears to have the potential for becoming violent
- 52% of schools train their campus police officers in active shooter response tactics
- 64% of schools never have conducted active shooter drills

Prevention and Response

- One-third of schools do not have a mutual-aid agreement with neighboring law enforcement agencies, and 48% do not have mutual-aid agreements with surrounding communities for emergency medical training or support
- 84% of schools have campus police officers who carry "less than-lethal" weapons, and only one-third have police officers who carry firearms
- 41% of schools report that their communications equipment is not interoperable with local law enforcement agencies
- 66% of schools report that their communications equipment is not interoperable with Federal law enforcement or emergency management agencies

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Figure 4—Abridged summary of *Report on Campus Violence Prevention and Response: Best Practices for Massachusetts Higher Education*

heavy emphasis on equipment, and a lack of commitment to large-scale, multi-agency, outcomes-based training sessions. Local politics and agency agendas (12 points), lack of knowledge from decision-makers (11 points), and school officials' attitudes toward police and EMS (6 points) also were cited as major obstacles to successful preparedness. These responses are consistent with the survey results, confirming that first responders lack confidence in government officials' and school administrators' levels of awareness.

The respondents noted that integrated, realistic training (22 points), improved school involvement in planning and training (14 points), and federal funding (11 points) were the most important steps in overcoming the obstacles to developing an effective response. The comments noted that a federal standard with attached funding should be pursued and that attempts should be made to utilize all existing resources.

Discussion

Schools are considered protected sanctuaries, places that children can learn, mature, and develop the critical skills necessary to lead this country in the future. The US should take great efforts to protect students, who are the most vital and irreplaceable resource. Unfortunately, some government and school officials have chosen to minimize the threat, citing the unlikely nature of a terrorist attack to justify a lack of planning and preparedness.

The threat of domestic and international terrorist attacks on US schools is a significant possibility.¹⁰ One needs to search no further than press reports to illustrate the threat. In 2004, US forces captured an Iraqi national who was in possession of the 2003 US Department of Education school terrorism response manual entitled, "Practical Information on Crisis Planning, A Guide for Schools and Communities."⁶ In 2005, intelligence reports suggested that Abu Musab al-Zarqawi, al-Qaeda's chief ally in Iraq, may have been planning attacks on "soft targets" in the United States including movie theaters, restaurants, and schools.¹¹ And, in March of 2007, the US Federal Bureau of Investigation and the Department of Homeland Security, issued an alert regarding foreign nationals with extremist ties attempting to buy school buses and obtaining school bus drivers licenses.

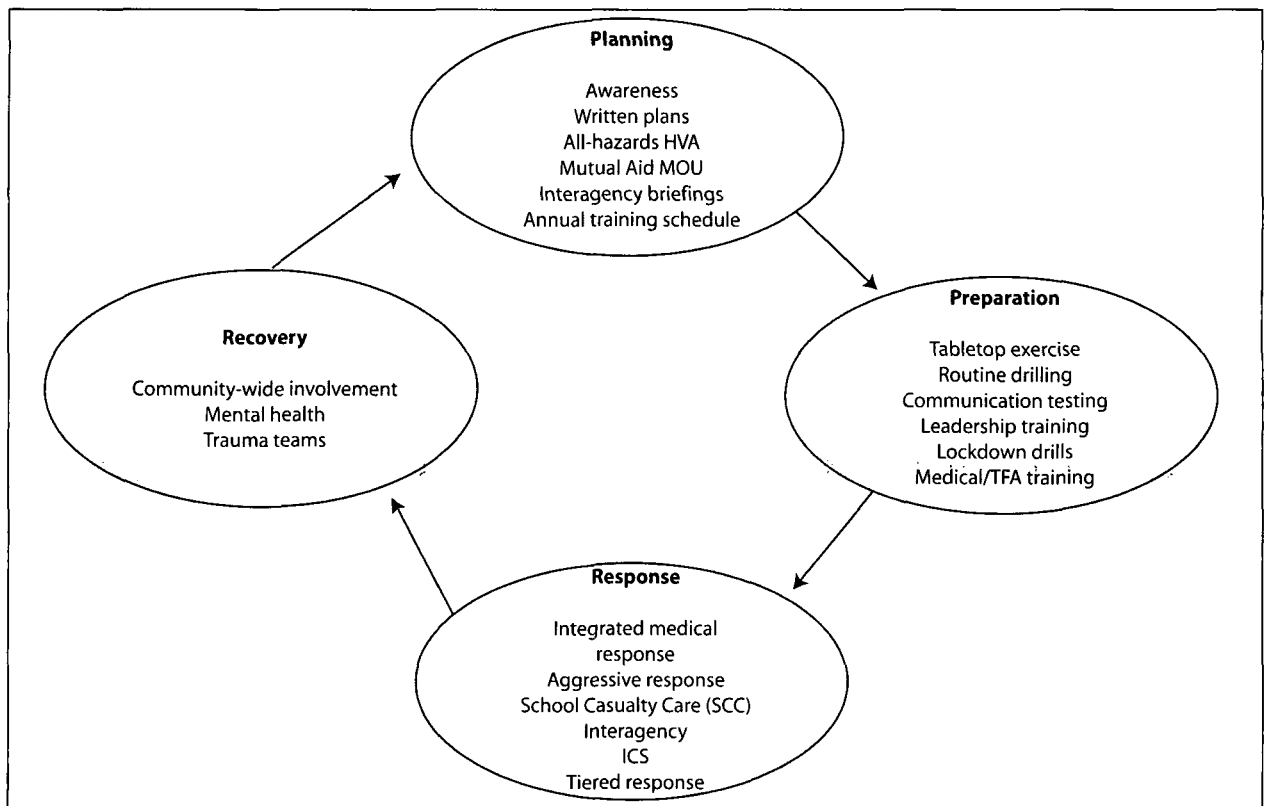
The results of this survey indicate that the problem is not the threat awareness of EMS, law enforcement, and first responders. Rather, there appears to be a lack of a broader commitment to risk mitigation as it relates to school violence. These findings are supported by a recent study of Massachusetts institutions of higher education, which revealed significant gaps in the implementation of a universal response protocol for school safety (Figure 4).

Two themes were evident from the survey results. First, within the emergency responder community, there is a perception that the public, the schools, and the government do not take the threat of large-scale school violence seriously. This perception was captured in both the survey and post-conference questionnaires. Several suggestions were offered to close this gap including mandatory training, increased funding for disaster and terrorism education, community resiliency programs, and more active engagement of school officials. Second, the respondents cited a troubling lack of interagency collaboration and training in preparation for large-scale community violence. Many felt that the post-11 September 2001 cooperative advances are beginning to fade, due to less overt security threats as well as an increased delegation of resources to the military component of the war on terrorism.

Based upon official conference transcripts, post-conference surveys, and solicited responses from breakout session moderators, several key recommendations were identified. The recommendations are not meant to be all-inclusive. Rather, they seek to define critical gaps and provide broad guidance for filling these gaps within current risk management paradigms. These conclusions were reviewed by representatives from each participating agency. The traditional disaster cycle also was used to frame proposed corrective actions (Figure 5).

Mitigation

1. *Mindset*—Emergency response leaders must pursue efforts to change the mindset of citizens and educators with regards to planning for and reducing the effects of school violence. Fear is best met through education, training, and honest acknowledgement. At a minimum, these efforts should include:



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Figure 5—Proposed matrix for risk management of school violence (HVA = Hazard Vulnerability Assessment; ICS = Incident Command System; MOU = Memorandum of Understanding)

- a. Broad-spectrum education including actions to be taken during siege and active-shooter conditions;
 - b. Parental education regarding preparedness;
 - c. Information dissemination focused on domestic and international school violence;
 - d. Curriculum development at the national level for implementation in all schools;
 - e. Injury prevention model utilization for educator training, including multiple crises responses (e.g., hurricane, shooting, or stabbing, student with a seizure);
 - f. Graphic training aid development for teachers to re-familiarize themselves with response principles (student casualty care, etc.); and
 - g. Resilience knowledge school curriculum integration.
2. **Funding**—Funding should be secured to allow the development of effective emergency response plans and violence mitigation strategies in US schools. Since 2003, federal funding for the Department of Education's Emergency Response and Crisis Management (ERCM) program, now known as the Readiness and Emergency Management (REM) for Schools program, has been cut by almost 40%.¹² These cuts result in fewer School Resource Officers, weaker infrastructure protection, and less training for teachers.
 3. **Prioritization**—Purchasing equipment does not equate to realization of a capability. According to most conference participants, it is much easier to purchase equipment with counterterrorism funding than it is to

plan and program training that actually creates capabilities. Integrated, reality-based training will help identify the required tools and will remove those that do not perform well within the operational parameters. Municipalities and regional Department of Homeland Security officials must push to allow more relevant application of Homeland Security funding.

Preparedness

4. **National Emergency Management Plans**—Emergency management plans must be developed for all schools and requisite refresher training should be mandated at the national level. Conference participants hypothesized that >90% of schools do not have an adequate emergency management plan. Though resources exist, they felt that educators and administrators in schools do not have the training necessary to either develop or implement emergency management plans. The group recommended collaboration between the Department of Homeland Security and the Department of Education to create an effective national program in improved lockdown procedures, and community engagement that may overcome the perceived resistance of many school administrators to allow police and EMS access to their schools for situational training.
5. **Outcomes-Based Training**—Individual and collective training should be outcome-based. Most training methodologies allow for one outcome, one right way, one static condition, and involve completing the task in isolation from other events. This effectively teach-

es people “what” to think instead of reinforcing “how” to think under pressure. In order to build robust capabilities in operational personnel, they must understand the “why” behind what they are doing and be able to “apply the why” under stress. Not demanding free thinking under stress often leads to either inaction on the part of responders (because they do not possess a frame of reference for when the rules cannot be applied) or repetition of an incorrect action without any noticeable result.

6. *Integrated Training*—Training must include integrated full mission profiles of the worst possible event contingencies. There are serious inter-operability issues (e.g., between individual law enforcement agencies, between law enforcement and EMS, and between school officials and first responders) and leadership challenges (centralizing command and decentralizing execution abilities) that only can be reduced through live, scenario-based training from incident to realistic conclusion. This requirement is complex, time-consuming, and can be costly. However, if integrated as part of a broad “all hazards” approach, it can strengthen emergency responses and community resiliency.

Response

7. *Integrated Response*—Tactical plan must include a medical/rescue plan that is integrated and can occur within the operational parameters of the tactical problem. Many current rescue plans are based on single, contained events that are static in nature and will not meet the demands of dynamic events. As demonstrated in Mumbai, terrorists are more likely to stage tiered attacks with combined tactics of both siege and roaming assaults. Waiting for the “all clear” to be completed and an “all secure” call prior to moving casualties to care caused serious problems at Columbine and resulted in at least one death that potentially was preventable. The assault in Beslan lasted >9.5 hours and most of the rescues of children had to be attempted by parents because there was no integration of the tactical and rescue elements. Waiting for “scene safety” to occur may not be an option in complex attacks such as those that may take place on large university campuses.
8. *Dynamic Responses*—The threats faced by municipal leaders and responders are multi-faceted, dynamic, and require preparedness. There has been a critical escalation in violence. Events on the scale of Beslan, Virginia Tech, Columbine, and Mumbai are shocking, but no longer unexpected. Preparing for them is not an option; it is a mandate. The ability to rapidly transition from a response to a single barricaded suspect to a counter-assault in a domestic terrorist event is not a common capability and can lead to the hazardous application of the wrong tactics for each situation. Community, school, medical, and police leadership must be well-versed in modern terrorist threats in order to identify cues and develop the capabilities to end negotiations and begin an assault to mitigate an event if required.

9. *Inter-operability*—Inter-operability issues should be addressed and overcome during realistic integrated training events involving multiple agencies. Training exercises involving municipal leadership and operational personnel should be routinely conducted. Exercises can be accomplished with and without personnel and utilization of effective simulation training can help overcome initial barriers. However, actual integrated training must occur at the operational level to ensure that law enforcement, fire, and rescue personnel from different sectors can react and quickly adapt to engage dynamic threats and minimize the loss of life.

Resilience

10. *Citizen Involvement*—Training citizens, especially those most likely to be involved in incident management in response procedures (e.g., point-of-injury medical care) will build resilience in a society and create depth within our responses. In order to mitigate school violence and limit the consequences of terrorist attacks, it is absolutely essential to train teachers to conduct proper lockdown procedures and efficiently treat injured students during a tactical school response. The after-action reports from the Virginia Tech shooting reflect the effectiveness of even improvised lockdown procedures; when one class managed to effectively barricade their door with their bodies and furniture, no one in that room was killed by the lone shooter. Teachers are required to be first responders and are trained in cardiopulmonary resuscitation (CPR). Multiple studies demonstrate that CPR has little, if any, role in the resuscitation of the victim with penetrating trauma. National leaders should examine the point-of-injury first responder trauma training that has significantly decreased mortality from penetrating trauma in the Global War on Terrorism. Evolution of this model at a national level to a program of Student Casualty Care (SCC) is a step in the right direction.¹³

Limitations

The limitations of this survey are those inherent in the collection of data from an educational conference. First, there was lack of equal representation of all categories of attendees, specifically school administrative officials. Invitations were sent to local institutions of higher education and, in most cases, representatives of the campus public safety or police were the only attendees. This limited input from school administrators, also illustrated a gap in the prioritization of violence prevention within many educational administrations. Second, though the sessions were “closed-door”, there may have been some hesitation to speak critically given the diverse representation from >30 agencies, an inherent limitation in non-anonymous data collection. However, the fear of reprisal was reportedly low in informal discussion (additionally, paramedics, police officers, and counter-terrorism experts are rarely restrained by political correctness). Third, the participants were largely from the Northeastern US. Therefore, survey results may represent

regional phenomenon. However, given the inclusion of national and international participants, the participant comments likely are representative of national opinions. In addition, there was likely a significant selection bias in conference attendees. As this was a free event on counter-terrorism, attendees likely had prior knowledge or interest in the topic. This falsely could have elevated their reported awareness scores, however, should not have affected their increased awareness post-conference compared to pre-conference. Lastly, the generalizability of this study to the international community are not clear.

Conclusions

The challenges of inter-agency operations are not new and are well-documented in the literature, popular press, and squad rooms throughout the US. The simple question remains: how does the first responder community remedy this situation? One respondent from the EMS community noted that truly integrated response and community commitment to preparedness unfortunately may require, "at least two concerted attacks on US soil." *Post-hoc*, reactionary policies are rarely fruitful and always are costly. And, while preparedness does not equate to prevention of all school attacks, the aftermath of unpreparedness for a Beslan style attack surely would deepen societal wounds exponentially.

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