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THESIS

FACILITATING THE MEDICAL RESPONSE INTO AN ACTIVE SHOOTER HOT ZONE

by

Martin T. Tierney

June 2016

Thesis Co-Advisors: Nadav Morag
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The response to active shooter attacks is not as effective as it could be. People die before receiving care because most jurisdictions have a policy in place that stipulates emergency medical services (EMS) wait to enter a scene until law enforcement (LE) announces that the scene is clear or secure. Since this can take some time, life-saving care is not immediately available to the people who most need it, and consequently, there can be a greater loss of life. How can a combined LE and EMS response, based on combat medical care, be effective in saving lives during an active shooter incident?

Utilizing 10 historic active shooter cases ranging from the Texas tower shooting in 1966 and concluding with the Sandy Hook school shooting in 2012, I analyzed the responses to consider the response times of the responders, time of access to the victims, and transport time to medical facilities. The basis for the responses utilized data collected by the U.S. military from combat injuries sustained from World War II through the current conflicts in the Middle East. From these analyses, I am able to show that fast field intervention based on training, policy, and operational planning with the Incident Command System component, which includes both law enforcement and fire/EMS entry teams, will provide better patient viability prior to hospital care.

This will not be a critique of right and wrong, as the responders did what was needed at the time; however, in current-day hindsight, there are points that can be noted for future response growth.

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FACILITATING THE MEDICAL RESPONSE INTO AN ACTIVE SHOOTER HOT ZONE

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ABSTRACT

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LIST OF ACRONYMS AND ABBREVIATIONS

3 ECHO	entry, evaluate, and evacuate
AAR	after action report
ALERRT	Advanced Law Enforcement Rapid Response Training
ASTITP	Active Shooter Threat Instructor Training Program
CALEA	Commission on Accreditation for Law Enforcement Agencies
CCP	casualty collection point
DHS	Department of Homeland Security
DOD	Department of Defense
EMS	emergency medical system
EMT	emergency medical technicians
FBI	Federal Bureau of Investigation
FDLE	Florida Department of Law Enforcement
HazMat	hazardous materials
HSPD	Homeland Security Presidential Directive
IACP	International Association of Chiefs of Police
IAFF	International Association of Fire Fighters
ICS	Incident Command System
LE	law enforcement
MAC	mutual aid compact
MACTAC	Multi-Assault Counter-Terrorism Action Capabilities
MOA	memorandum of agreement
MOU	memorandum of understanding
MTF	medical treatment facility
NCBRT	National Center for Biomedical Research and Training
NIMS	National Incident Management System
NTOA	National Tactical Officers Association
OODA	observe, orient, decide, act
RDSTF	Regional Domestic Security Task Force
RTF	rescue task force
START	simple triage and rapid treatment

SWAT	special weapons and tactics team
TECC	tactical emergency casualty care
TEMS	tactical emergency medicine services

DEDICATION

The dedication I used in a 2009 paper[1] has not changed, as these things have not changed.

All blessings I have received have been as gifts from Christ, my redeemer. It is through His grace and mercy that I accomplish anything.

To my wife, Donna, who has endured far more than I could have and still remains my strongest supporter and anchor. She has taken the place as first violin, as she has permitted me to strive for this and many more goals. She has been wife, mother, co-breadwinner, partner, and, as needed, a pin in my balloon when I forgot my place. We have come a long way from Elm Street in Fayetteville.

To those in the arena.

[1] Martin T. Tierney, "Law Enforcement Planning and Response: A View toward Emergency Management through an Inverted Funnel" (master's thesis, American Military University, 2009), 3.

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Men exist for the sake of one another.

— Marcus Aurelius

I claim this as my personal page, my chance to put away academics for just a minute and speak from the heart. Many people have been with me for this endeavor, and for each I am truly humbled and grateful, for each has taught me something about life, themselves, or myself. I had absolutely no idea the impact and scope of change that 9/11 would have on me that morning in 2001. I experienced an absolute change in course, and it took me years to realize and acknowledge it as I moved away from conventional policing. I hope, in some small way, I have made things just a little better.

Many years ago, I acknowledged Jesus Christ as my Lord and Savior. Perhaps in these times, it appears to be a politically incorrect thing to say and believe, but I have found that "I can do all things through Him who strengthens me," and in my darkest times, He has always been there for me and it is for Him alone that I live.

To my wife, Donna, who daily shows me what a strong person is, I am so happy to have her by my side, sometimes in front to lead, sometimes behind to follow, but always by my side. I am truly humbled to be in your life. To my children, Jim, Pat, and Kate. No one could be prouder of what you have become and where you are going.

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To West Palm Beach Police Department retired Chief Vince Demasi, current Chief Bryan Kummerlen, and Assistant Chief Mary Olsen, who all gave me the go-ahead for this pursuit. To Captain Brian Kapper, who took my responsibilities when I would leave and to the other members of the Command Staff. And to the Men and Women of the West Palm Beach police department: ”Greater love has no man than to lay his life down for another.”

Finally, to the brave members of law enforcement, fire, and EMS, as well as the members of the military, whose constant and daily sacrifice make some sanity rise to the surface in a crazy world. I am proud and overwhelmed to be counted as one of your brothers in both uniforms.

I. INTRODUCTION

The Department of Homeland Security (DHS) defines an active shooter as "… an individual actively engaged in killing or attempting to kill people in a confined and populated area; in most cases, active shooters use firearms(s) and there is no pattern or method to their selection of victims."[1] The various events occurring around the country that involves active shooters continues to force the responder community to evaluate and re-evaluate their responses to these incidents. Gone is the absolute process of "plausible reasoning," which is explained by Jones as "leaping to a conclusion that is 'probably' correct based on the recognition of similarities between the situation confronting us at the moment and one that confronted us in the past."[2]

Law enforcement (LE) continues to be the primary responder to active shooter calls due to the potentially violent nature of these calls. In an emergency, the law enforcement component is followed on almost simultaneously by the fire/ emergency medical services (EMS) component. While this operational response is successful based on the separation of the responder entities, it is not sufficient for the victims of the incident if there is an opportunity to provide a joint entry response that initiates the assault on the shooter(s) and begins the triage portion for the victims. Depending on the size of the jurisdiction, response to such an incident may require only that jurisdiction's assets to respond. However, history shows that multiple jurisdictions respond to active shooter incidents with law enforcement, fire/EMS, and command personnel. Our question is how do we utilize these responders to the best of their abilities and to the benefit of the victims?

A. RESEARCH QUESTION

How can a combined LE and EMS response, based on combat medical care, be effective in saving lives during an active shooter incident?

---

[1] U.S. Department of Homeland Security, *Active Shooter: How to Respond*, U.S. Department of Homeland Security, 2008, https://www.dhs.gov/xlibrary/assets/active_shooter_booklet.pdf.

[2] Morgan Jones, *The Thinkers Toolkit* (New York: Three Rivers Press, 1998).

B. PROBLEM STATEMENT

The response to active shooter attacks is not as effective as it could be. People die before receiving care because most jurisdictions have a policy where EMS wait until LE clears the scene, and, since this can take some time, life-saving care is not available to the people who most need it. Consequently, there is greater loss of life.

There is has been much written concerning the planning for and response to these events to contain and eliminate the threats(s). Additionally, there has been a great deal of forensic examination of these incidents or what Paul Mullen calls "autogenic massacres," which is explained as "victims may be selected largely at random … essentially self-generated (by the perpetrator).[3] Mullen's use of the term "random" is explained as "where the perpetrators indiscriminately kill people in pursuit of a highly personal agenda arising from their own specific social situation and psychopathology."[4] There are several issues to explore: what can and should be considered while the operation is ongoing; what additional actions can law enforcement take in the "warm-zone" that has been cleared; what actions can law enforcement take when the attackers have been isolated by responding forces. Additionally, what can the emergency medical service be doing while the action is still ongoing? The research shows that a paradigm shift in both disciplines is taking place across the country, albeit slowly. For example, there is now a merging many of the existing training courses for law enforcement with EMS for combined responses to active shooter incidents. This singular development by the respective disciplines is moving toward a consensus that merging the responses is a better way of performing. The analysis of this impending merger in some locations and the existing merger in other locations speaks to a basic focus of appreciative inquiry: "It is assumed that a basic level of normal function exists in any organization, and that the potential—or capacity—for exceptional performance is already embedded within the organization."[5]

---

[3] Paul E. Mullen, "The Autogenic (Self-Generated) Massacre," *Behavioral Science and Law* 22, 3 (2004): 312.

[4] Ibid., 312.

[5] Frank J. Barrett, and Ronald E. Fry, *Appreciative Inquiry: A Positive Approach to Building Cooperative Capacity* (Chagrin Falls, OH: Taos Institute Publications, 2005), 19.

Of necessity, the planning and policy concept also utilizes the tenants of a unified command. Both LE and EMS are trained together to act as a cohesive unit to address the shooter as well as the victims. The Department of Homeland Security (DHS), as well as national and local instruction facilities, are beginning to incorporate a medical aspect to the LE response.

A number of training sites and programs under development are addressed in the thesis. The Advanced Law Enforcement Rapid Response Training (ALERRT) program from Texas, the 3 ECHO (entry, evaluate, and evacuate) response in Minneapolis, and the Arlington County, Virginia response plan are some of the response plans that are currently in use. Research based on historic incidents shows there is a need to develop more fully the training of officers responding in the second or third wave to better escort and protect the arriving EMS personnel who need to begin medical tasks. This would allow EMS to begin to address life saving measures for those who appear to have non-fatal injuries. Additionally, this thesis examines the use of an incident command structure (ICS) in past incidents to determine the feasibility of its use to coordinate exterior operations in the "warm" zones wherein immediate medical triage and treatment could begin while the operation is still ongoing. A greater understanding of the four main disciplines, police, emergency medicine, military combat operations and field medical support coalesce into a guide for a unified command structure under ICS and aid future planning for the civilian first responders at active shooter scenes.

C. SIGNIFICANCE OF RESEARCH

As the research for this paper grew, it substantiated on important theory—that this was in fact a "confirmatory" test. There was no doubt that faster access to victims of active shooters, or for that matter any mass casualty incident, would lead to a greater survival rate. In essence, this indicated that this is an "a prioi hypothesis," that is the outcome is already known. What is significant is that the creation of a program that combines the capabilities of the responders, both law enforcement and fire/EMS, is one of critical importance for a successful intervention and rescue of the injured. The abilities

of the various disciplines are ones of functionality. Each discipline is a complex system exclusive to itself yet interdependent with other complex systems (disciplines) to function fully, much like a racecar components or the human body.

D. METHOD

The method of research for this thesis will be a mix of the following:

- Case studies of 10 historical events involving active shooters. In each case, the time of access to the patients/injured victims as well as the time of transportation is important. Both access and transportation are due to actions or inactions of the law enforcement responders. Timeliness of wound care and treatment based on studies from the military are important consideration.
- Discipline specific studies, reports, and published articles as well as theses and published books, which provide historic information, best practices and lessons learned.
- I will rely upon my career history (introduced later) in an action research to explain portions of incident response issues that he has observed in a pseudo “naturalistic observation” capacity.

II. RESEARCH DESIGN

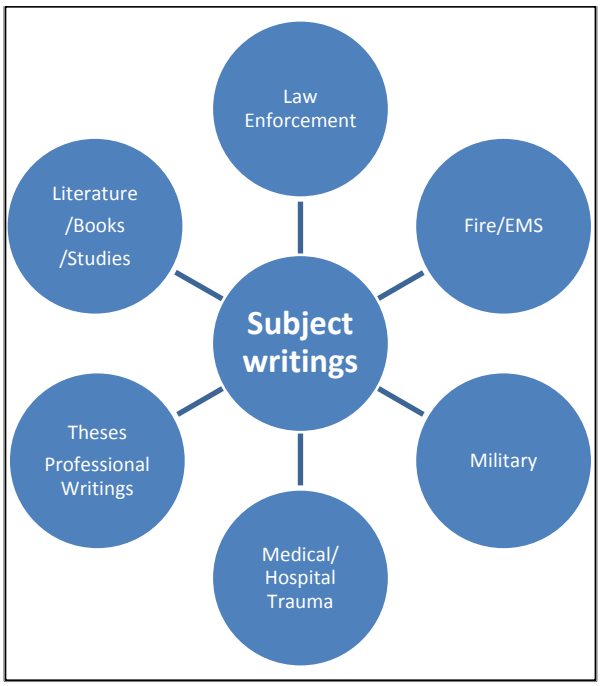
This thesis began with the idea of providing faster medical assistance to the injured in an active shooter incident. In order to look at this, it is necessary to review select historic incidents that had some impact on the growth of the law enforcement and fire/EMS communities with regard to the response to these type incidents. As part of the methodology, requests were sent to a number of cities and counties to determine the impact that past events have had on them and to determine if they had policies for active shooter events for both fire and law enforcement.

A portion of the research was a formal request to 60 mid-sized cities or counties for both law enforcement and fire/EMS policies concerning active shooter response plans and procedures. The clerk of the specific city or county jurisdiction was requested to provide specific information directly or forward the request to the respective law enforcement or fire/EMS agency. The request consisted of three simple statements and a request for any policies if the agency had an active shooter policy in place:

> I am requesting answers from both police as well as fire/EMS to the following questions:
>
> 1. The department does / does not have an active shooter policy;
> 2. The policy is a standalone active shooter policy or;
> 3. It is combined with a general crisis response policy.
>
> If you have any policy, please send an electronic copy to me at the above email address.

Figure 1 illustrates the thought picture that forms the nucleus for subject-matter writings that reviewed for this thesis. The use of existing writings from different responder organizations, past educational writings, and literature specific to incidents, practices, or studies provided a foundation for study and analysis of the active shooter history, response procedures, both historic and current as well as proposed.

Figure 1. Thesis thought picture



This thesis includes a qualitative analysis that uses various policy models, such as from guidelines from the International Association of Chiefs of Police (IACP) and the National Fire Academy. It also includes is a review of information from various federal agencies and existing policies concerning active shooter responses by both law enforcement and fire/EMS to examine practices and lessons learned from the various agencies.

As law enforcement and the medical disciplines develop specific concepts with some currently in place separately, I used an appreciative inquiry approach to demonstrate the procedures are currently used by each discipline that have proven to be effective. As defined in Barrett and Fry, "Appreciative Inquiry (AI) is a strength-based, capacity building approach to transforming human systems toward a shared image of their most positive potential by first discovering the very best in their shared experience."[6] It is a given that law enforcement agencies have a policy for use of force in

[6] Ibid., 25.

incidents and that fire/EMS have a policy or procedure for, at minimum, mass casualty events, if not specifically for active shooter incidents.

As I write in this Emic style ("relating to or denoting an approach to the study or description of a particular language or culture in terms of its internal elements and their functioning rather than in terms of any existing external scheme"[7]), I am aware of this and refer the readers to a portion of the book, *The Action Research Dissertation: A Guide for Students and Faculty*, written by Kerr and Anderson:

> This type of self-reflective action research is always written up in the first person. Evans's (1995) narrative has characteristics of a story, with elements of humor and irony and a narrative hook that leads the reader into wanting to read more. Practitioners tend to use narrative and story as a way to communicate professional knowledge, which makes it particularly appropriate for action research.[8]
>
> However, it raises epistemological problems in the sense that unexamined, tacit knowledge of a site tends to be impressionistic, full of bias, prejudice, and unexamined impressions and assumptions that need to be surfaced and examined. Furthermore, insiders, because they are often true believers in their particular practices, are too often tempted to put a positive spin on their data. For this reason, mechanisms for dealing with bias need to be employed.[9]

My advisors have cautioned me that personal involvement as I have incorporated it can hold limited validity.

By way of introduction, I served eleven years in the United States Army from 1972 to 1975 and returned to service from 1976 to 1984. I achieved the position of assistant platoon sergeant and the rank of staff sergeant. Eight of those years were as a military police officer and five of those years were with the 82d Airborne Division as a member of the military police company. I also spent 29 and a half years as a civilian law enforcement officer from 1984 to 2014 in the state of Florida. Throughout that career, I served in rank from a patrol officer and retired as the captain. In those 29 and a half

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[7] *New Oxford American Dictionary*, s.v. "Emic," Oxford University Press. 2015

[8] Kathryn Herr, and Gary L. Anderson, *The Action Research Dissertation: A Guide for Students and Faculty* (Thousand Oaks, CA: Sage Publication, Inc., 2005), Kindle locations 598–600.

[9] Ibid., Kindle locations 606–609.

years, I served as a patrol officer, patrol sergeant, patrol lieutenant, and the patrol division commander.

As a lieutenant, I supervised the Training and Accreditation section of the West Palm Beach Police Department. This unit dealt with compliance with certain policy mandates and insuring that the department personnel maintained state certification level, state recertification level, and career development. Additionally, the department was accredited based on the requirements of the Commission on Accreditation for Law Enforcement Agencies (CALEA) organization. CALEA is an international credentialing organization that ensures that its member agencies meet numerous compliance measures as set forth by law enforcement's major executive associations:

- International Association of Chiefs of Police (IACP);
- National Organization of Black Law Enforcement Executives (NOBLE);
- National Sheriffs' Association (NSA); and
- Police Executive Research Forum (PERF).[10]

I also served 17 years as a member of the hostage negotiation team. I was the co-chair for the Critical Infrastructure and Key Assets Committee for the South Florida Regional Domestic Security Task Force (RDSTF) for the Florida Department of Law Enforcement (FDLE) region 7. During my tenure as a police officer, I was and still am certified as a trainer by the State of Florida and certified nationally to instruct in various levels of the Incident Command System (ICS). While with the city of West Palm Beach, I was also designated as the deputy emergency manager. Concerning the utilization of these experiences and the various interactions over 41 years, I refer to Herr and Anderson as they make point of to explain:

> Thus, local knowledge is most often shared, if at all, with only an immediate community of practitioners or community members. It is meant to address the immediate needs of people in specific settings, and it is this

[10] Commission on Accreditation for Law Enforcement Agencies, "The Commission," 2010, http://www.calea.org/content/commission.

> utility of knowledge generated by action research that represents one of its major strengths.[11]

As stated in Stringer, "A common approach to action research envisages processes of inquiry based on a practitioner's reflections on his or her professional practices."[12] Research for this thesis did not include interviews; however; class notes, conferences, and personal studies from over 41 years of public service forms, in part, the basis for this research. Kerr and Anderson point out, "Donald Schon's (1983) book, 'The Reflective Practitioner' encouraged practitioners to begin to tap into their store of professional knowledge in order to make it explicit and share it with other practitioners."[13]

My personal experience within a military command and civilian law enforcement responses to critical incidents is chronicled to demonstrate, based on that experience and career education, that there is a better response model to active shooters that incorporates a joint team effort. The research method I chose for this paper is based on what is known as action research (AR) or participatory action research (PAR) as well as a number of other names, as noted by Kerr and Anderson:

> There are several terms in current use that describe research done either by or in collaboration with practitioners and/or community members. The most common ones are action research; participatory action research (PAR); practitioner research; action science; collaborative action research; cooperative inquiry; educative research; appreciative inquiry; emancipatory praxis; community-based participatory research; teacher research; participatory rural appraisal; feminist action research; feminist, antiracist participatory action research; and advocacy activist, or militant research.[14]

The use of AR or PAR addresses a number of issues, one of which is the varied disciplines with which it can be used. As McIntyre writes in her book, *Participatory Action Research*:

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[11] Herr, and Anderson, *The Action Research Dissertation*, Kindle locations 203–205.

[12] Ernest T. Stringer, *Action Research* (Thousand Oaks, CA: SAGE Publications, 2013), xv.

[13] Herr, and Anderson, *The Action Research Dissertation*, Kindle locations 424-425.

[14] Ibid., 153–155.

> The originators of the principles, methodologies, epistemologies, and characterizations that inform PAR projects are worldwide and span many decades. In the late 1970s and 1980s, for example, Tandon (1981) and Kanhare (1980) initiated PAR projects in India that addressed adult education and women's development, respectively. In Columbia, Fals-Borda (1985, 1987) and his colleagues engaged in PAR projects aimed at increasing adult literacy. In neighboring Peru, de Wit and Gianotten (1980) participated in a training program for rural farmers. In Chile, Vio Grossi (1982) worked with local communities to address agrarian reform. Swantz (1982) and Mbilinyi (1982) engaged in PAR processes to improve education for peasant women and other residents of Tanzania. In that same country, Mduma (1982) participated in a PAR project with local Tanzanians to develop agricultural technology.[15]

I synthesized my experience as well as existing and model policies to form a possible template for interoperability between law enforcement and fire/EMS. Within this portion of the analysis is the consideration of the legalities and liabilities to the various governmental entities that this new policy needs to address. In their book, Herr and Anderson describe the use of AR this way, "Unlike traditional dissertations that insist on a dispassionate, distanced attitude toward one's research, action research is often chosen by (doctoral) students because they are passionate about their topic, their setting, and co-participants."[16]

I looked at a compilation of open source historical data and case reports from past active shooter events (see Figure 2) to see the various responses from law enforcement and fire/EMS.

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[15] Alice McIntyre, *Participatory Action Research* (Thousand Oaks, CA: Sage Publication, 2008), Kindle ed., Kindle locations 173–178.

[16] Ibid., Kindle locations 129–131.

Figure 2. Historic events

These responses may begin to answer the questions as to what can and should be considered by responding units and by the command personnel while the operation is developing. One very important note concerning the review of historical incidents: I am very comfortable in stating that as calls for service develop, the dynamics involved change constantly, almost second to second. With that caveat, I can only comment on what is presented in open source references and not the minute-by-minute decisions made by the responders on a second-by-second basis. All responders made, at that time, the decisions and choices that they did based on the event and their training and experience at that time. I will endeavor to point out what we, the response community, know now and hopefully will not be taken to task for "Monday morning quarterbacking" of the actions taken at that time. It is not my intent to denigrate any of the responses but merely point out what could have been done and what tools may have been brought to bear.

The thesis begins with the 1963 Texas tower shooting in Austin, Texas, and concludes with the Newtown, Connecticut, shooting at Sandy Hook Elementary School. The incidents that examined are:

A. August 1, 1966, Austin, Texas (TX), University of Texas massacre

B. July 18, 1984, San Ysidro, California (CA), McDonalds massacre

C. January 8, 1986, Edmond, Oklahoma (OK), Edmond Post Office shooting

D. October 16, 1991, Killeen, TX, Luby Restaurant massacre

E. February 28, 1997, North Hollywood, CA, North Hollywood Bank shootout

F. April 20, 1999, Littleton, Colorado (CO), Columbine High School shooting

G. April 16, 2007, Blacksburg, Virginia (VA), Virginia Tech massacre

H. February 14, 2008, DeKalb, Illinois (IL), Northern Illinois University massacre

I. July 20, 2012, Aurora, CO, Aurora Movie Theater shooting

J. December 14, 2012, Newtown, Connecticut (CT), Sandy Hook Elementary School massacre

Each of the events selected have had an impact on civilian response procedures for future events. This thesis also includes a brief examination of the medical data from sources that detail information from the military and its progression in battlefield medicine, field triage, and treatment prior to evacuating the wounded to field hospitals. Based on historical studies by the U.S. military, I hypothesized that a faster response to an active shooter scene by EMS personnel while inside a protective cordon of police officers would permit a quicker and more capable first treatment response, thereby increasing the chances for a viable patient to reach a hospital emergency department.

The final portion of this paper is an explanation of the initiation of a unified incident command system on scene to facilitate the cooperative actions of the responders while an on-going operation is taking place—one involving the active pursuit and elimination of the shooter(s) and the medical response and treatment of the injured. The results of the analysis demonstrate what has historically been right, what has gone wrong, and what has been missing. The final recommendation suggests how the various entities within a jurisdiction can join forces when responding to active shooter incidents

specifically. I hope these concepts can be utilized for other large incidents in a more comprehensive manner to facilitate a quicker interaction with the injured on scene and to establish a more cohesive incident command structure to address common problems and issues that may arise.

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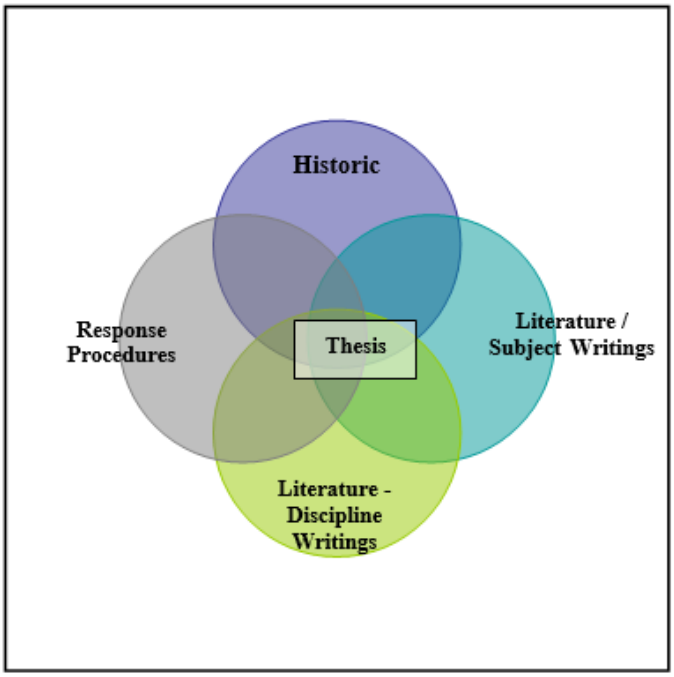
III. LITERATURE REVIEW

The issues of tactics and techniques for active shooter incidents are being brought to the forefront across the nation, and as a growing development at local, county, state, and federal training facilities. Some agencies have already adopted some model of response, including both law enforcement and medical personnel, and other agencies are examining the possibilities. Public safety training institutes are collaborating with educational facilities to provide this training, and private enterprise is preparing courses to address this need. It is proper to re-examine the historic incidents that have occurred in the country for not only the response procedures at the time but also what they inspired from other agencies. Any analysis of responses to treat casualties under fire must also incorporate the lessons learned from the military and its evolution of battlefield medicine and field treatment under fire. Figure 3 demonstrates the various sub parts of the thesis and the combining of the parts into the paper.

Figure 3. Thesis contribution diagram



A. TACTICS AND TECHNIQUES

Texas State University in San Marcos is the headquarters of the Advanced Law Enforcement Rapid Response Training (ALERRT).[17] ALERRT trains in two modules: level 1 is the basic LE response, and level 2 builds on level 1 with first aid training for buddy assistance and mass casualty care. Many national programs also offer the LE response portion by partnering with the Department of Homeland Security, such as Louisiana State University's, National Center for Biomedical Research and Training (NCBRT).[18] The Department of Homeland Security (DHS) also has information on its web page regarding online training and printed materials for active shooter preparedness.[19] At the Federal Law Enforcement Training Center, based in Glynco, Georgia, there is a trainer program called Active Shooter Threat Instructor Training Program (ASTITP)[20] for law enforcement officers to become field trainers in their respective agencies and communities. Arlington County, Virginia has adopted a joint medical and law enforcement program that may well be the impetus of a national response plan known as the "ACFD Rescue Task Force."[21]

The trending issue of police response to active shooters has started a nationwide examination of the issue. Agencies from local, county, state, and federal are examining what methods can be utilized to provide faster treatment to the injured while locating the shooter(s). As noted above, there are a number of courses are offered.

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[17] ALERRT Center, Texas State University-San Marcos, "Home," accessed June 14, 2013, http://alerrt.org/

[18] National Center for Biomedical Research and Training, "Law Enforcement Active Shooter Emergency Response (PER-275)," Louisiana State University, 2013, accessed June 14, 2013, http://www.ncbrt.lsu.edu/catalog/performance/laser.aspx.

[19] U.S. Department of Homeland Security, "Active Shooter Preparedness," last updated November 30, 2015, http://www.dhs.gov/active-shooter-preparedness.

[20] U.S. Department of Homeland Security, "Federal Law Enforcement Training Centers," accessed June 14, 2013, http://www.fletc.gov/training/programs/enforcement-operations-division/active-shooter-threat-instructor-training-program-astitp/.

[21] Arlington County Fire Department, *Arlington County Fire Department Standard Operating Procedures: Rescue Task Force Response, SOP # F.28/Cat 1* (Arlington, VA: Arlington County Fire Department, 2013).

Additionally, the leading spokes organization for firefighters and emergency medical personnel, the International Association of Fire Fighters (IAFF), has released a position paper for what is identified as "Rescue Task Force Training."[22] Furthermore, the IAFF has also released a position paper titled *Active Shooter and Mass Casualty Terrorist Events* and note in it that responders "must find ways to marshal appropriate and effective responses to these events."[23]

Information written on the subject of response to active shooters has been from the police and EMS sides of the issue. For the police, an active shooter response is based on locating and eliminating the threat. For the EMS, the concern is access to the injured. Since the Columbine High School attack in Littleton, Colorado in 1999,[24] there has been a change to the tactics and techniques that the police utilize for active shooter response as well as those used by the fire and emergency medical service units.

To do proper justice to this subject of battlefield lifesaving during a police operation, multiple disciplines have been examined by both law enforcement and fire/ EMS, including not only the police tactical response but also the meshing of fire and EMS response, military lifesaving tactics. Hospital trauma considerations must also be examined as well as the National Incident Management System (NIMS) and the Incident Command System (ICS).

B. THE MILITARY MEDICAL FRAMEWORK

No literature review that addresses the role of medical response and active shooter operations can be complete without the history and accomplishments of the military

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[22] International Association of Fire Fighters, *IAFF Position Statement: Rescue Task Force Training*, International Association of Fire Fighters, June 2013, http://www.iaff.org/Comm/PDFs/ IAFF_RTF_Training_Position_Statement.pdf.

[23] International Association of Fire Chiefs, *IAFC Position: Active Shooter and Mass Casualty Terrorist Events*, International Association of Fire Fighters, October 10, 2013, http://www.iafc.org/files/ 1ASSOC/IAFCPosition_ActiveShooterEvents.pdf.

[24] Columbine Review Commission, *The Report of Governor Bill Owens* (Columbine, CO: Columbine Review Commission, 2001), https://schoolshooters.info/sites/default/files/Columbine%20-%20Governor's%20Commission%20Report.pdf.

establishment from around the world. One of the sources that can be examined is the United States Army field manual (FM) 4–25.11, the first aid manual for the U.S. military.

In another source, the author of an article entitled, "Eliminating Preventable Death on the Battlefield," notes, "… historically, approximately 90% of combat-related deaths occur prior to a casualty reaching a medical treatment facility (MTF)."[25] It is due to conflicts that civilian casualty care began to improve concerning trauma care. According to an article in *Archives of Surgery*, "Combat casualty care in World War II, the Korean War, and the Vietnam War resulted in incremental and significant improvement of civilian trauma care and systems."[26]

Mabry and De Lorenzo explain, "If a salvageable patient arrives alive at surgical care in the current conflict, the likelihood of survival is nearly 98 percent."[27] A demonstration of the link to the cross-cultural move from the military side to the civilian side, "Army medics are now required to pass the civilian National Registry of Emergency Medical Technicians (EMT)-Basic examination, the entry-level civilian certification."[28] It has been clearly demonstrated that the military medical community has increased the trauma treatment time over the past century:

> Rapid evacuation of the wounded began with basic aeromedical transport (without in-air medical care) in the Korean War and progressed to sophisticated multi-casualty helicopter transport with airborne treatment in Vietnam. The 'average time from injury to definitive care decreased from 12 to 18 hours in World War 11, to 2 to 4 hours in Korea, and to less than 2 hours in Vietnam.[29]

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[25] Russ S. Kotwal et al., "Eliminating Preventable Death on the Battlefield," *Archives of Surgery* 146, no. 12 (2011): 1350–1358.

[26] Ibid., 1350.

[27] Robert L. Mabry, and Robert A. De Lorenzo, "Improving Role I Battlefield Casualty Care from Point of Injury to Surgery," *Army Medical Department Journal (MEDD Journal*) (April–June 2011): 87–91.

[28] Ibid., 91.

[29] Kenneth V. Iserson, and John C. Moskop, "Triage in Medicine, Part I: Concept, History, and Types," *Annals of Emergency Medicine* 49, no. 3 (2007): 275–281.

On the subject of the Aurora, Colorado shooting, the *Denver Post* writes:

> Dr. Bruce Wapen, a board-certified emergency physician who works in a California hospital emergency department and occasionally serves as an expert witness, said minutes are critical for gunshot victims. 'Minutes count,' Wapen said. 'With chest and great vessel injuries, and organ injuries, speed is very important.'[30]

C. THE LAW ENFORCEMENT RESPONSE

The response to active shooter incidents has gone through a period of evolution. From Charles Whitman in Texas to the most recent incident in Newtown, Connecticut, the police response has transitioned from attacking the shooter with whoever is available to hold and wait for the special weapons and tactical team (SWAT) to the most current response involving an ad hoc small unit or even single officer entry.

Most literature concerning these tactics is discipline specific and ex post facto; it is non-peer reviewed journals directed to law enforcement, fire, and emergency medical services (EMS). The authors are experienced in their fields, but often times these pieces are opinion based on personal involvement, some brief study, or after-action report. What is of greatest value are the specific points that these collective minds produce from the incidents, lessons learned, and practice with specific tactics and modifications. The literature reveals that all responders must consider trauma care as well as the reconstruction of the crime.

An issue that is becoming more prevalent is the nontraditional response of police officers is transporting the wounded upon arrival to the incident. In order to expedite the transport of the injured, in response to the 2012 Aurora massacre, Aurora police officer Justin Grizzle transported six people to the local emergency departments in four trips. According to an article in the *Denver Post*:

> By dawn, pools of blood gathered on his floorboards and seat cushions. There was blood on his car's ceiling, on its dashboard, on its headrests.

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[30] Chuck Murphy, and Karen E. Crummy, "Some of the Most Injured in Aurora Massacre Waited for Help," *The Denver Post*, July 25, 2012, http://www.denverpost.com/ci_21149531/some-most-injured-aurora-massacre-waited-help.

> "There was so much blood," Grizzle testified Monday, "I could hear it sloshing in the back of my car."[31]

Dr. Kevin Gerold, a physician at the Johns Hopkins School of Medicine and the Chair of the National Tactical Officers Association's (NTOA) Tactical Emergency Medicine Services (TEMS) Section, states:

> patrol officers are now trained and equipped to intervene to end active killing, using tactics that were once reserved for special weapons and tactics (SWAT) teams. Where TEMS was conceived to support special operations teams, the time has come to provide patrol officers with basic TEMS training and equipment in order to potentially save the lives of victims, bystanders, police officers and suspects in the event they are wounded.[32]

D. THE EMS RESPONSE

For a response to an active shooter scenario, operations must incorporate the joint response for a mass casualty incident as well as a crime scene incident. All responders must consider trauma care and the reconstruction of the crime. As callous as it is, lawsuits will follow the incident in which all responders will play their parts once again. A document just released by the International Association of Fire Fighters (IAFF) notes, "Local fire and police departments should establish standard operating procedures to deal with these unusual, highly volatile, and extraordinarily dangerous scenarios." [33] According to E. Reed Smith, and Blake Iselin:

> The current standard fire/EMS response to the active shooter is to stage in a secure location until police mitigate the threat and secure the area to create a scene safe for fire/EMS operations. However, there is a basic problem with this response: While waiting for a secure scene, those injured inside the building aren't receiving care and are dying from their injuries.[34]

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[31] Ibid.

[32] Kevin Gerold, "TEMS Position Statement," *The Tactical Edge* (Fall 2013): 86.

[33] International Association of Fire Fighters, *IAFF Position Statement*.

[34] E. Reed Smith, and Blake Iselin, "Toward the Sound of Shooting: Arlington County VA Rescue Task Force Represents a New Medical Response Model to Active Shooter Incidents, *Journal of Emergency Medical Services* 34, no. 12 (2009): 48–55, http://www.jems.com/articles/print/volume-34/issue-12/major-incidents/arlington-county-va-task-force.html.

E. USING AN INCIDENT COMMAND SYSTEM

Currently, when it comes to mixing and merging the various thought processes and job tasks for the initial first responders, there is a disconnect. The police have a specific job to accomplish— isolate and neutralize the attacker(s); EMS also has a specific job—the responsibility of treating the injured and wounded. There is a gap in the response training and planning across the country, the police are not being prepared for the medical necessities of the victims and the EMS personnel are not being prepared tactically to enter the scene and begin treating the victims. The exception to this rule is the tactical medic assigned to the SWAT teams who is present to attend to members of the SWAT team if they become disabled or wounded and not present to attend to injured civilians. Paul Atwater and others endeavor to close this gap from the firefighting side.[35] Theodore Moody, with a law enforcement background, examines the issue of the response action in his thesis. He remarks, "Filling the gap between NIMS/ICS and the law enforcement initial response in the age of the urban jihad."[36] In addition, Moody looks at the use of incident command to coordinate the responding agencies as well as communication capabilities. Additional resources remain discipline specific and do not look into the possibilities of advanced first aid training for law enforcement coupled with the tactical side of a joint emergency medical response for mass casualty active shooter incidents.

F. LITERATURE REVIEW SUMMATION

The three primary disciplines, the military, law enforcement, and fire/EMS, all agree on the need for quick attention to the wounded. The military, as separate entity from the civilian first responders, has proven that immediate attention to combat wounds is imperative to presenting a viable patient to more advanced field medical facilities.

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[35] Paul A. Atwater, "Force Protection for Fire Fighters Warm Zone Operations at Paramilitary Style Active Shooter Incidents in a Multi-Hazard Environment as a Fire Service Core Competency" (master's thesis, Naval Postgraduate School, 2010), https://www.hsdl.org/?view&did=710217.

[36] Theodore Moody, "Filling the Gap between NIMS/ICS and the Law Enforcement Initial Response in the Age of the Urban Jihad" (master's thesis, Naval Postgraduate School, 2010), https://libsearch.nps.edu/vufind/Record/710235.

When a soldier receives first aid either self-applied, from a "battle buddy," or from a trained medic, the chances of survival increase tremendously. The U.S. Army Rangers have proven the concept of field first aide with the information provided in studies of wounded Rangers as compared to other service members deployed in Iraq and Afghanistan.

> A total of 419 battle injury casualties were incurred during 7 years of continuous combat in Iraq and 8.5 years in Afghanistan. Despite higher casualty severity indicated by return-to-duty rates, the regiment's rates of 10.7% killed in action and 1.7% who died of wounds were lower than the Department of Defense rates of 16.4% and 5.8%, respectively, for the larger U.S. military population (P=.04 and P=.02, respectively). Of 32 fatalities incurred by the regiment, none died of wounds from infection, none were potentially survivable through additional prehospital medical intervention, and 1 was potentially survivable in the hospital setting. Substantial prehospital care was provided by nonmedical personnel.[37]

Civilian responders have begun to slowly adopt the concept of field first aide using TEMS or a task force such as Arlington County, Virginia has initiated. At a minimum law enforcement has begun to reach out on two fronts. First, it now is beginning to equip officers with a field trauma first aid kit, permitting officers to make and carry their own, and teamed up with medical personnel to learn the basics of wound treatment, specifically ballistics wounds and hemorrhage control. On the other side of civilian responders, more is being done to train EMS and law enforcement to work together and to establish a frontline secured area for casualty collection and a quicker triage so that transportation can begin sooner.

Where there seems to be a gap is in the cooperative training of the law enforcement and fire/EMS side. It seems a bit silly that both entities would arrive at an incident and not get together to work out a common operations plan to be more effective in doing their separate jobs in a more cohesive spirit of cooperation. However, training command teams and personnel to work together in tabletop exercises is one thing, but training the field operators is another thing altogether. Supervisors that have been through joint training are able to say "do it," but the operators must also be trained to work

[37] Kotwal et al., "Eliminating Preventable Death on the Battlefield."

together. This is as easy as pulling units out of service for an hour to meet and conduct overview training a few times a week or month. Having field personnel come together and explain what they bring to a common situation allows the other parties to see how and why they can work together in better harmony. Both law enforcement and fire personnel love their gadgets and can let each discipline train with each other's equipment for familiarity. Then, a cohesive bond will begin to form. These responders know each other by site from the scenes they respond to; let them teach each other.

Historically, once an active shooter event begins, the responders are minutes away. The arriving responders would encounter wounded traumatized victims. Police and fire/EMS protocols are changing from having to wait to enter the scene to having active entry teams that can enter much sooner. Getting first aid to the victims is a game changer as illustrated by the assassination attempt of Congresswomen Gabby Gifford. She was on an operating table within one hour and did not bleed out at the scene because of actions taken by the responders who were present.

The literature is clear:

- Fast medical intervention saves lives.
- There is precedence for it and training is available.
- There is a need for teamwork at these types of scenes.
- It is dependent on the leaders to form these teams and insure that their combined mission of helping the public is realized.

In the next chapter, we look at the tactics and techniques used by the responders, beginning with the military. As a matter of necessity, the military has continued to adopt battlefield treatment techniques to address the casualties of combat. Because of past events involving both law enforcement and civilian casualties due to violence, law enforcement has also begun to look at field treatments. The fire/EMS discipline also has adopted many of military techniques with regard to mass trauma incidents. With these premises in mind, the next chapter includes a look at the Incident Command System and how it has the ability to tie all the responders into a more comprehensive, cohesive response team.

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IV. TACTICS AND TECHNIQUES

This chapter looks briefly at the disciplines that comprise the responder team. By utilizing the military as the foundation for active shooter response based on the potential need for medical assistance on the battlefield, we build on the law enforcement mission of neutralizing the aggressor(s), securing a "beach head" for follow-on forces of additional responding resources and assets as well as the immediate need for medical personnel to triage, treat, and transport the injured. This chapter shows that when the responders arrive on scene various tasking must be doled out to maintain control of the scene in a safe and orderly manner. Finally, the chapter concludes with the forming of a joint unified command under the ICS system.

A. LESSONS FROM THE MILITARY

In 1993, members of the U.S. military initiated an operation in Mogadishu, Somalia, intended to capture a number of commanders leading the insurgency in and around the city. The operation consisted of two phases. One was a ground movement of armored vehicles to the target location to assist in the securing it and to provide protection during the operation and after it as the units withdrew. The second phase was the helicopter insertion of troops onto the rooftop of the target location to capture the wanted leaders. As the mission started, one of the soldiers fast roping onto the roof of the building fell to the roof and was injured. As the mission continued, medical personnel attended to this injured soldier. The ground team now had the additional duty of treating and transporting this soldier, and three of the 12 vehicles were directed to do this. As the mission continued, a support helicopter was shot down, crashing into the city blocks away from the target location. Again, the commander decided to split his command and have a rescue team move, on foot, to the downed helicopter. The rescue team came under intense fire and was stalled on the ground due to injuries. Another rescue team in an armored vehicle was sent in to assist them and rescue the pilot. The total number of vehicles then rose to 25 and involved a few hundred ground troops.

In a review of the operation, a workshop held by military leaders later determined that with the amount of casualties in this mission, there was a greater need for medical assistance in addition to the medics assigned to the operation. The workshop committee determined, "If tactical medicine involves complex decisions about both tactics and medicine, then we must train the tactical decision-makers—the mission commanders—as well as combat medical personnel in this area."[38] Frank Butler explains in his paper for the Naval Medical Center San Diego (NMCSD), *Tactical Medicine Training for SEAL Mission Commanders*, "This engagement resulted in the most U.S. casualties in a single firefight since Vietnam (18 dead, 73 wounded). In addition, there was a delay of 15 hours before the first wounded were evacuated to a combat support hospital."[39]

The formal introduction of the tactical combat casualty care (TCCC) into the military began in 1997 with the Navy SEALS. This was followed a year later with its introduction to the Army Rangers. The Center for Army Lessons Learned describes:

> TCCC has three goals:
>
> - treat the casualty,
> - prevent additional casualties,
> - complete the mission.
>
> There are three stages of care with these goals:
>
> - Care under fire is the care rendered at the point of injury while both the medic and the casualty are under effective hostile fire.
> - Tactical field care is the care rendered by the medic once he and the casualty are no longer under effective hostile fire.
> - Tactical evacuation care is the care rendered once an aircraft, vehicle, or boat has picked up the casualty.[40]

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[38] Frank K. Butler, Jr., "Tactical Medicine Training for SEAL Mission Commanders," Navy Medical Center San Diego, July 2000, http://www-nmcsd.med.navy.mil/support/trauma/specops/TACMED-Butler.html.

[39] Ibid.

[40] Center for Army Lessons Learned, *Tactical Combat Casualty Care Handbook* (Ft Leavenworth, KS: Center for Army Lessons Learned, 2010), http://www.globalsecurity.org/military/library/report/call/call_10-44.pdf.

TCCC also advocates the use of tourniquets on the battlefield and the use of hemostatic clotting agents in either a powder or a gauze form, as noted in the Butler and Blackbourne article. The authors explain:

> The studies of Kragh et.al. on tourniquet use in Iraq and Afghanistan have documented a remarkable incidence of lives saved with prehospital tourniquet use without causing preventable loss of limb from tourniquet ischemia. Studies of hemostatic agents used in combat have documented the efficacy of the previous agents HemCon and QuikClot. The newer hemostatic agent Combat Gauze has been shown in to be superior to HemCon and QuikClot in an animal model of lethal arterial bleeding; the initial report on battlefield use of Combat Gauze indicated good success in combat casualties.[41]

The military has always been a test area for many of the practices and equipment that find their way into the civilian world. Battlefield medicine is certainly one of these, and its techniques are becoming more readily accepted in the civilian first responder communities.

B. THE EMS RESPONSE

Fire/EMS personnel responding to an active shooter incident have three choices: 1) secure their gear and enter the scene as quickly as possible to get to the injured as soon as possible; 2) wait until the scene is declared safe/secure by law enforcement after the site has been thoroughly searched and begin rescue operations; or 3) enter the warm zone with a security detail after law enforcement has performed a quick security sweep. Choice 1 is extremely dangerous and goes against major safety protocols and policies for any agency. Choice 2 has historically been proven to be deadly for the waiting injured and emotionally traumatizing for the responders, witnesses, and family as well as being a tremendous liability for the jurisdiction. Choice 3 has started to become the best possible scenario for these types of incidents.

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[41] Frank K. Butler, Jr., and Lorne H. Blackbourne, "Battlefield Trauma Care Then and Now: A Decade of Tactical Combat Casualty Care," *Journal of Trauma and Acute Care Surgery*; vol. 73, no. 6 (2012): Supplement 5, S395–S402.

As seen above, immediate medical treatment continues to save the lives of viable patients even while in a hostile area. It seems safe to point out that once a more prompt response is initiated, the morbidity and mortality rates would dramatically.

Fire/EMS personnel constantly train and are drilled, even on calls, to perform a site assessment prior to entering any scene, and in many cases, they use the law enforcement on scene to perform this "blue canary" mission. This pause becomes the "warm" zone—that place between the cold and the hot zones. While traveling to the scene, they are being advised of the situation on scene and should understand the great possibility of arriving at a mass casualty scene and the necessary protocols to follow for cuts, lacerations, and penetrating wounds.

C. THE LAW ENFORCEMENT RESPONSE

The current law enforcement response to active shooters is aggressive and dynamic. Officers are taught when responding to an active shooter incident prepared to make entry, isolate, and neutralize the assailant as quickly as possible. The evolution for this strategy is demonstrated in the following reviews of historic cases as well as follow-on chapters dealing specifically with the response aspects of such incidents. Responders have learned from the events of the past few years, and as a result, current training has begun to stress the need for law enforcement officers to decide to carry a weapon when off duty. If not needed on scene, then the officer will hopefully be a good witness; however, if needed, the officer is prepared to intervene to protect life.

For many years, as part of their response to shooter events, officers were taught to establish a perimeter while the SWAT team was assembling and wait until SWAT arrived on scene to take over the incident response. This response plan has now changed to a more aggressive response with officers entering the scene and acting individually or in very small, ad hoc teams. What has also begun to change is the training that officers receive dealing with basic trauma care for persons or fellow officers shot by the assailant. The use of trauma dressings and tourniquets is becoming the norm for the basic line officer. This is based on a few hours of classroom training that stresses immediate care of hemorrhaging and maintenance of airways. In addition, officers are also being taught to

include an incident command protocol in their response, which is something that the fire responders have been doing for years.

D. USING AN INCIDENT COMMAND SYSTEM

The use of some form of coordination to respond to large incidents has been around for decades, and the use of a system for planned events or unexpected incidents has been field tested over that very long period. The use of an incident command system for the fire responders was developed in the 1970s for dealing with wild fires that encompassed hundreds and thousands of acres.

In an excerpt from my 2009 thesis, here is a brief explanation of the NIMS and ICS:

> Based on the 2003 Homeland Security Presidential Directive-5, (HSPD-5) [42] Management of Domestic Incidents, the secretary of homeland security (Tom Ridge at the time) was directed to formulate the National Incident Management System (NIMS). The purpose of the NIMS, a flexible and standardized method, was designed as an all-hazards method of dealing with incidents on a national level.
>
> NIMS consists of six components:
>
> 1. Command management utilizing the Incident Command System (ICS), a multiagency coordination approaches (MAC) and a public information system.
> 2. A preparedness component involving planning, training, exercises, personal qualifications, equipment acquisition and certification process, mutual aid and publications management
> 3. Resource management
> 4. Command and information management to include incident management communications and information management
> 5. Supporting technology
> 6. On-going management and maintenance.
>
> The ICS component of the NIMS has been a tested and proven method of best practices involving incident management since its inception in the early 1970s for use in the wildfire communities in the west. In addition,

[42] White House, *Management of Domestic Incidents* (HSPD-5) (Washington, DC: White House, 2003), http://fas.org/irp/offdocs/nspd/hspd-5.html.

> the ICS has been utilized for fires, rescues, hazardous materials (hazmat) incidents, as well as for biological and disease containment events. The main function of the system is its flexibility, use of compartmentalized "sections" for command and control, and performing specific "functions" to accomplish an overall mission. ICS has tremendous strength in its ability to expand and contract as needed, adding and deleting assets as necessary for an operation. ICS also incorporates the use of common terminology, accountability, and span of control, formal plans, and the use of "known" typed resources. Moreover, ICS is also able to operate in either a singular, unified, area command atmosphere, depending on the jurisdictions, agencies, and geographic area involved.[43]

HSPD-5 directs the secretary of homeland security to develop the National Incident Management System (NIMS), "prevent, protect against, respond to, recover from and mitigate the effects of incidents, regardless of cause, size, or complexity."[44] Utilizing the concept of "best practices," the NIMS was created to address the "all-hazards" concept of planning and responding. Based on the precepts of the NIMS, the *National Response Plan* (NRP) was created as the guideline for incidents occurring in the United States."[45]

The time for the planning of combined operations is prior to the event. Planning meetings or simple brain storming meetings can begin to generate the concepts that needed by both the law and medical sides. Heuer refers to as "cross-fertilization of ideas," and he states that as a creative thinking strategy, "ideas should be combined with each other to form a more and even better idea."[46]

Clarity of information, intelligence, and performance lose a bit as responders enter an active incident. It is vitally important that their ability to perform is bolstered not

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[43] Martin T. Tierney, "Law Enforcement Planning and Response: A View toward Emergency Management through an Inverted Funnel" (master's thesis, American Military University, 2009).

[44] U.S. Department of Homeland Security, *National Incident Management Plan* (Washington, DC: U.S. Department of Homeland Security, 2008), i.

[45] U.S. Department of Homeland Security, *National Response Plan* (Washington, DC: U.S. Department of Homeland Security, 2004).

[46] Richard Heuer. Jr., *Psychology of Intelligence Analysis* (Washington, DC: Center for the Study of Intelligence, Central Intelligence Agency, 1999), 75–78.

only by the belief in their own capabilities but also in the knowledge that those working with them on the responder team are comfortable working with them.

E. CONCLUSION

In this chapter, I have endeavored to illuminate the components of an active shooter response utilizing the military as a platform for the law enforcement and fire/ EMS response. I concluded with what I believe is the paramount organizational setup to provide the 3Cs (command, control, communications) for all elements of the response utilizing a joint incident command model. The ICS model relies on its key ability to expand and contract as needed with an important caveat—that of not negating the command structure of the various disciplines that will be arriving and working on scene. The one true requirement for an effective ICS response is preplanning and practicing of the components to maintain the control of the incident together.

In the next chapter, I examine the research design used to gather information from various jurisdictions, introduce the 10 historic cases, and also introduce myself to establish credentials for personal observations and comments made within this thesis.

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V. CASE STUDIES

In this chapter, we examine 10 historic active shooter incidents. I reviewed open source information and formal after action reports, when available, for these incidents for patterns of action or omissions of actions as can best be determined from the sources used. According to a study conducted by the New York City Police Department from 2000 to 2012, there have been 324 attacks in our workplaces, schools, and public spaces by individuals who engage in what are known as "active shooter" events (see Table 1).[47]

Before moving forward into the history of some of the attacks, it is important that certain information and statistics are brought to bear. Some of this information is new, or current, and in some instances, surprising and disturbing. At the October 2013 IACP conference, Special Agent James Yacone of the Federal Bureau of Investigation (FBI) noted the following statistics (see Figure 4) during his introductory remarks for the "Active Shooter 360" panel presentation. The presented information is from an academic study completed in 2012 regarding the last 35 events revealed."[48]

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[47] New York City Police Department, *Active Shooter: Recommendations and Analysis for Risk Mitigation* (New York: New York City Police Department, 2012), http://www.nyc.gov/html/nypd/downloads/pdf/counterterrorism/ActiveShooter2012Edition.pdf.

[48] Personnel notes from the "Active Shooter 360" panel presentation, IACP Conference, Smart Policing, October 2013, Philadelphia, PA; Katherine W. Schweit, "Addressing the Problem of the Active Shooter," *FBI Law Enforcement Bulletin* (May 2013), http://www.fbi.gov/stats-services/publications/law-enforcement-bulletin/2013/May/active-shooter.

Figure 4. 2012 NYPD active shooter study

- From 2000—2008 the U.S. averaged 5.2 incidents / yr
- From 2009 to the present we averaged 15.75 active shooter incidents / yr
- Victims have gone up nearly 150%
- 74% attacker entered via main access point
- 37% over in less than five minutes, remainders in less than 12 minutes
- 51% occurred in workplace

Adapted from New York Police Department, *Active Shooter Recommendations and Analysis for Risk Mitigation* (New York: New York Police Department, 2012).

The premier current study is one completed by the New York City Police Department (NYPD). This document, released right after the Newtown, CT shooting, speaks to only the 35 incidents from 2010 through Newtown incident, and a previous NYPD study looked at the 281 shootings from 1966 through 2010.[49] What is important to note at this time in history is that between the two studies, "The NYPD's analysis demonstrates that 98% of active shooter incidents in the active shooter data set were carried out by a single attacker. This finding is unchanged from the 2010 edition of this report."[50] This is critical in future concerns in light of the multi-assailant 2008 Mumbai, India attack, the January 2013 Amenas, Algeria, Tigantourine oil field attack, and the September 2013 Westgate Mall attack in Nairobi, Kenya. It is very plausible, in fact probable, that multi-attacker incidents will strike this country in the future.

The 2012 NYPD report provides information that demonstrates that these types of attacks are certainly not limited to schoolhouses and children. Table 1 appears in the NYPD report.

[49] New York Police Department, *Active Shooter Recommendations and Analysis for Risk Mitigation (1966–2010)* (New York: New York City Police Department, 2011), http://www.nyc.gov/html/nypd/downloads/pdf/counterterrorism/ActiveShooter.pdf.

[50] New York Police Department, *Active Shooter Recommendations* (2013), 5.

Table 1. Active shooter locations

Location Type	Number of Incidents	Percentage
School	68	24%
Office Building	31	11%
Open Commercial	67	24%
Factory/Warehouse	33	12%
Other	80	29%
Total	279*	100%

* The 230 cases in the active shooter data set occurred at 279 locations because several attacks involved more than one location. The increase in incidents at "other" locations since the 2010 Edition is primarily due to the shootings in Wixom, Michigan, which occurred in at least 24 locations along a highway.

NYPD 2012 report (table 1)

Source: New York Police Department, *Active Shooter*, 8.

Additional facts presented by the 2012 report concern the 192 incidents to which force was applied or the attacker committed suicide; the percentage for suicide is 48 percent.[51] The notion that upon arrival of law enforcement that the attacker will commit suicide seems contrary to this number. Fully half of the attackers were stopped by law enforcement or some other intervention (see Table 3).

Table 2. Active shooter resolution

Resolution	Number of Incidents	Percentage
Applied Force	99	43%
No Applied Force	37	16%
Suicide/Attempted Suicide	93	40%
Attacker Fled	1	<1%
Total	230	100%

Source: New York Police Department, *Active Shooter*, 9.

[51] Ibid., 3.

On August 27, 2013, the New York State Intelligence Center (NYSIC) released a report entitled *An Analysis of Active Shooter Events in the United States: March 2011–March 2013*. The report points out that in the 20 events included, "In nearly all cases (905), active shooter events take place in public locations (e.g., schools, malls, movie theaters)…in nearly 75% of the shootings…the assailant lived less than eight miles from their target."[52]

With regard to the shootings that have occurred across the nation, history shows us that an immense number of personnel and amount of resources can be used in the response to these events. Affected jurisdictions will initially have all on-duty personnel, fire, EMS, law enforcement either arriving at or moving toward the scene of the incident. Command personnel, city leaders, and other civilian assets and personnel will follow in short order. Depending on the jurisdiction, there will also be an influx of local, county, state, and federal resources. Additionally, according to Captain Joe Rios from Newtown, "within the first two weeks 65, different local agencies assisted with over 1,500 to 2,000 officers."[53] This shows that the influx of people is not just at the initial scene. Of course, there will be other responders to include the media, non-government organizations (e.g., Red Cross, Salvation Army, or the National Voluntary Organizations Active in Disasters [VOAD]), self-volunteers, responding "professionals and experts," do-gooders, plus the mail, gift packages of food, clothing, toys, and all the other items well-wishers send.

As demonstrated by Sandy Hook, an incident can go from daily life to absolute chaos in a matter of a few seconds or minutes. It becomes a true "black swan" event—very low on possibility, a high-risk scenario with tremendous consequences—or does it? The use of the term "black swan" describes an event that has three components, as defined by Nassim Nicholas Taleb, "I stop and summarize the triplet: rarity, extreme impact, and retrospective (although not prospective) predictability."[54] Taleb uses the

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[52] New York State Intelligence Center, *An Analysis of Active Shooter Events in the United States: March 2011–March 2013* (New York: New York State Intelligence Center, 2013), 3.

[53] Personal notes from IACP Conference.

[54] Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable Fragility* (New York: Random House, 2010), Kindle ed., Kindle locations 441–444.

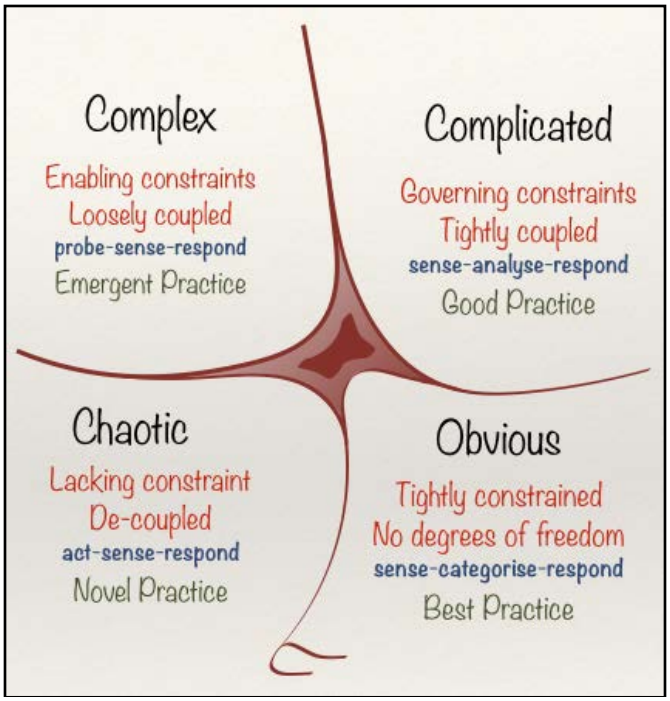
term “outlier” to describe the first requirement—it is so far outside the scope of consideration that its occurrence is a rarity. The issue of public autogenic massacres is not new, not to the United States nor to the world; where this instance becomes a rarity is when it happens in one’s own town. If one were to graph a black swan event, it would have a very dramatic vertical rise at the left side of the chart indicating the beginning of the incident. The continuing incident would drop off gradually but continue out to the right for an extended distance. The spike on the chart, when a black swan incident occurs, exceeds all other incidents dramatically with a resulting “tail,” making it a “long tailed event” or one that matches Taleb’s second criteria (extreme).

The task now becomes making sense out of the chaos that is occurring and is still occurring. One tool for consideration to address help with this is the “Cynefin framework,” created by Dave Snowden (see Figure 5). According to Snowden:

> The Cynefin (pronounced cun-ev-in) model focuses on the location of knowledge in an organization using cultural and sense making aspects of four different forms of community, both formal and informal. Three of these communities are a part of the day-to-day life of any large organization, the forth is domain of innovation and strategies for forcing innovation are discussed.[55]

[55] David Snowden, *Cynefin, A Sense of Time and Place: An Ecological Approach to Sense Making and Learning in Formal and Informal Communities* (Surrey: University of Surrey, 2011), http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.196.3058&rep=rep1&type=pdf, 1.

Figure 5. Cynefin domains



Source: *Wikipedia*, s.v., "Cynefin Framework," accessed November 28, 2015, https://en.wikipedia.org/wiki/Cynefin_Framework#/media/File:Cynefin_as_of_1st_June_2014.png.

Snowden quotes Sinclair and Nonaka and Konno, to explain:

> It describes that relationship: the place of your birth and of your upbringing, the environment in which you live and to which you are naturally acclimatized." (Sinclair 1998). It differs from the Japanese concept of Ba, which is a "shared space for emerging relationships" (Nonaka & Konno 1998) in that it links a community into its shared history—or histories in a way that paradoxically both limits the perception of that community while enabling an instinctive and intuitive ability to adapt to conditions of profound uncertainty.[56]

Thus, with that explanation, we can see that the incident becomes localized to us, to our community, to our singular and collective knowledge, cultures, plans, and training based on what we know of the community built as well as individual. It also entails what mechanisms we can bring to the table to address the particular pieces of which of the four

[56] Nicholas Sinclair, in his preface to Kyffin Williams *The Land & the Sea*, quoted in Snowden, *Cynefin*.

domains we find ourselves in both individually and collectively. It is within these domains we must operate at that particular time. Snowden makes a clear distinction that the Cynefin diagram is a framework rather than one of categorization. He reasons:

> We make a strong distinction here between sense making frameworks and categorization frameworks. In a categorization framework, four quadrants are often presented in a two-by-two matrix (for examples, pick up any management textbook or analyst report). Typically, it is clear (though often unstated) that the most desirable situation is to be found in the upper right-hand quadrant, so the real value of such a framework is to figure out how to get to the upper right. In contrast, none of the domains we will describe here is more desirable than any other; there are no implied value axes. Instead, the framework is used primarily to consider the dynamics of situations, decisions, perspectives, conflicts, and changes in order to come to a consensus for decision making under uncertainty.[57]

As can be seen in Figure 5, there are four visible "domains" to the framework, and the fifth is in the middle and represents disorder. It is from the center domain that decisions makers will lean toward their preferred domain for operating in if they are not sure which of the four are prevailing at the time. That choice by the leader becomes a place of self-interpretation of the decisions to be made. According to Kurtz and Snowden, "The stronger the importance of the issue, the more people seem to pull it towards the domain where they feel most empowered by their individual capabilities and perspectives."[58]

As a matter of reference, Table 3 shows the critical times for the incidents as determined from after action reports (AARs) or open source documents.

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[57] Cynthia F. Kurtz, and David J. Snowden, "The New Dynamics of Strategy: Sense-making in a Complex and Complicated World," *IBM Systems Journal* 42, no 3 (2003): 468. 462–483.

[58] Ibid., 470.

Table 3. Critical times

Date	Location	Known As	Incident Start	Dispatch	Arrival	Entry	Incident Stopped	Transport
8/1/66 Mon.	Austin, TX*	University of Texas	1148	1148/1153	~1200	~1318	1324	1212 (0:24)
7/18/84 Wed.	San Ysidro, CA*	McDonalds	1559	1604	1607	N//A	1716	~1717 (1:18)
1/8/86 Wed.	Edmond, OK*	Edmond Post Office	0700	~0700	0730	0830	0715	0730 (0:30)
10/16/91 Wed.	Killeen, TX*	Luby Restaurant	1235	1239	1244	1244	1251	~1251 (0:16)
2/28/97 Fri.	N. Hollywood, CA*	N. Hollywood Bank Shootout	0914	0917	0917	N/A	1001	=/> 0917 (0:00)
4/20/99 Tue.	Littleton, CO	Columbine High School	1119	1122	1124	1206	1208	~1208 (0:49)
2/4/98 Thu.	DeKalb, IL	Northern Illinois Univ	1505	1506	1506	1507	1511	1617 (1:12)
4/16/07 Mon.	Blacksburg, VA	Virginia Tech Massacre	0940	0942	0945	0950	0951	0950 (0:10)
07/20/12 Fri.	Aurora, CA	Aurora Movie Theater	0038	0039	0040	N/A	0045	0049 (0:11)
12/14/12 Fri.	Newtown, CT	Sandy Hook Elem. School	0930	0936	0939	0944	0940	10:00[1] (0:30) 10:08[2] (0:38)

*No after action report available, all information from public open sources.

[1] Police transport to EMS unit[60]

[2] EMS calls in first transport

[60] "Sandy Hook Elementary School Shooting—Newtown Police / Fire and CT State Police Radio Traffic," YouTube video, posted December 14, 2012 by Radioman911TV, https://www.youtube.com/watch?v=ETkrxfYoQtc.

A. AUGUST 1, 1966, AUSTIN, TX, UNIVERSITY OF TEXAS TOWER

On the afternoon of August 1, 1966, Charles Whitman, a student at the University of Texas at Austin and a former United States Marine, rode the elevator to the top floor of the University Tower at the university. He then climbed the stairs to the twenty-eighth floor observation platform, 231 feet above the ground. While on the twenty-eighth floor, Whitman beat and eventually shot the receptionist for the observation deck. He encountered a couple coming down from the deck, exchanged pleasantries with them, and permitted them to leave. Next, Whitman encountered a family of six who were starting up the stairs toward him. Whitman fired his shotgun killing two and wounding two of the six. Dressed as a maintenance man, Whitman had used a hand truck to carry a footlocker with him that contained his supplies, among them food, water, rope, a transistor radio, and toilet paper as well as seven weapons with 700 rounds of ammunition.

From his vantage point, using the weapons skills he acquired as a child growing up and honed by the Marine Corp, Whitman sighted in on basketball coach Billy Snowden. According to Lavergne, "But the distance was extraordinary. Of all the victims, Snowden was the farthest from the Tower—well beyond 500 yards." [61] Continuing his narrative, Lavergne also tells of another distant rifle shot by Whitman:

> He [Schmidt] stood up to say something like, "It's okay, we're out of range." It was a fatal error. From over five hundred yards away, Whitman sent a round from the deck, over the entire length of the South Mall, over the Littlefield Fountain, over Neal Spelce's mobile unit, over the hood of the Chevrolet, and into the abdomen of Roy Dell Schmidt.[62]

At this point, approximately 20 minutes into the shooting, local law enforcement from Austin, Texas Department of Public Safety and the Secret Service detail for President Johnson were firing upon anything that moved on the tower. Lavergne

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[61] Gary M. Lavergne, *A Sniper in the Tower: The Charles Whitman Murders* (Denton, TX: University of North Texas Press), Kindle ed., Kindle location 3033.

[62] Ibid., Kindle locations 2952–2955.

observes, "It is not surprising, then, that Whitman did most of his killing and maiming during the first twenty minutes of the drama."[63]

As law enforcement responded, citizens of the community were fleeing, hiding, or converging on the scene. It becomes obvious, once again, that during any incident that the true "first responders" are in fact not law enforcement or fire/EMS but other civilians in the area of the incidents. Lavergne continues to narrate:

> Melvin Hees of Armored Motor Service was working in his office… Hees immediately located one of the (armored) cars and got it to the campus by 12:35 PM, it was used to evacuate at least two victims, David Gunby and Adrian Littlefield; it probably saved their lives.[64]

Lavergne continues, "the first of the victims to reach Austin's largest medical care facility—Brackenridge Hospital. The time was 12:12 PM."[65] Dr. Robert C. Stokes, working at the student health center, "received a call at 12:05 PM to go to the Tower… After Dr. Stokes treated them, an ambulance arrived to take the patients away…."[66] Dr. Stokes would then move to two additional locations to treat the wounded once he coordinated with campus security.

Whitman commanded the campus with both his vantage point and weapons skills from 11:48 AM until 1:24 PM. During that one hour and 36 minutes, he succeeded in killing 14 people and wounding an additional 32. Law enforcement were out gunned and eventually acquired rifles from a local sporting goods store to attempt to equalize their capabilities, a tactic that would repeat itself almost 30 years later in the North Hollywood shootout. Law enforcement also attempted to put a sniper in a small plane in an attempt to neutralize Whitman by air. This tactic failed to work as Whitman began shooting at the circling plane, but it did provide intelligence; his location on the tower and the fact that they were dealing with a single shooter. Shortly thereafter, armed with that information, law enforcement succeeded in entering the tower. According to Lavergne "For the first

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[63] Ibid., Kindle location 2923.

[64] Ibid., Kindle location 2960–2961, 2957–2958.

[65] Ibid., Kindle location 3103–3104.

[66] Ibid., Kindle location 3302–3304.

time in over ninety minutes Charles Whitman had company…."[67] as officers entered the twenty-eighth floor glass enclosed observation deck and exited onto the walkway in two different directions. Officers Ramiro Martinez, armed with his pistol, and fellow officer Houston McCoy, armed with a shotgun, turned the corner of the tower to confront and killed Whitman. Lavergne summarizes:

> A total of thirty-three missiles were fired at Whitman by Ramiro and Houston. Ramiro fired six rounds from his revolver; Houston fired eighteen pellets in two shots. Ramiro (who had taken the shotgun from McCoy and charged a wounded Whitman) fired another nine pellets at very short range from one shotgun blast.[68]

As this event captured the attention of America and specifically the police, a sea change occurred, the creation of a special trained force from within the police departments that were trained and outfitted specifically to deal with these types of situations, hence the birth of the special weapons and tactics teams, SWAT. There is some discussion as to where this started, some say the Los Angeles police department and others point out other agencies. The point is that American law enforcement began to train officers to respond to similar incidents with tactics and equipment. These tactics were learned from, among other places, the U.S. military and its then current role in South East Asia, Vietnam.

Below is a summation of the response as well as the treatment and evacuation:

1. Analysis of response
    - No command and control for the scene
    - No coordination capabilities among officers, fire/EMS, security, and federal officers
    - No communications capabilities among officers, fire/EMS, security, and federal officers
    - Civilian responders with firearms
    - Improper law enforcement weapons for a siege/barricaded gunmen
    - No tactics for a siege/barricaded gunmen

[67] Ibid., Kindle location 3577.

[68] Ibid., Kindle locations 4761–4762.

- No “safe” method for extraction of the wounded from the field
- No established triage area(s)

2. Treatment and evacuation time
   - Those on scenes that were able to reach the injured and move them to safety or find them in a safe location began treatment.
   - Transport was ad hoc and done as needed

B. JULY 18, 1984, SAN YSIDRO, CA, MCDONALD’S RESTAURANT

On the afternoon of Wednesday, July 18, 1984, at 3:59 PM, James Huberty entered a McDonald’s restaurant in San Ysidro with an Uzi carbine, a Browning HP semi-automatic pistol, and a 12-gauge Winchester 1200 shotgun. He ordered everyone to “get down” and then began executing those in the restaurant. Starting at the serving line, he began firing, using the Uzi for most of the shots fired.

Police units including four officers and a sergeant, were dispatched to the scene. The first officer, Miguel Rosario, arrived in the parking lot at 4:07 PM, and he encountered Huberty coming out a door. The officer was overwhelmed by the firepower and forced to seek cover as Huberty retreated back inside the McDonalds. Rosario was concerned that there was more than one shooter, and he requested SWAT and other units.

When the incident was over, 77 minutes later, 40 people had been shot, and 21 of them were dead. Huberty succeeded in holding off the responding police, and it was not until he was killed by a police sniper could any medical treatment begin for those that injured. Huberty had also fired on a responding fire engine and struck a firefighter in the arm. One issue obfuscating law enforcement was the issue of the ability to see into the store. Dickinson describes, “Visibility into the building was severely hampered by a combination of sunlight, tinted windows and spider-webbed cracks from the previous gunshots.”[69]

The local police and responders had not encountered a situation like this. Almost 18 years had passed since the Texas tower shooting in Austin. “It was new then, as flying

[69] Eric Dickinson, “Lessons by the Decade,” *Law Officer*, August 2013, http://lawofficermagazine.com/article/training/lessons-decades-0?page=2.

an airplane into the World Trade Center was new in 2001," said Chuck Foster, the police sniper who ultimately ended the rampage. According to an article by Gresko, "All of the responders—the police officers, the firefighters, the paramedics—weren't foreseeing the scope of this killing spree."[70] In his CNN article, Jim Kavanaugh quotes Captain Miguel Rosario, who was a patrolman at the time and the first responding officer:

> Police clearly needed more firepower and a new strategy, Rosario said. Captain Rosario continued, "The time had come where you had to have a full-time, committed and dedicated, highly trained, well-equipped team ... that were committed to shooting, being in shape and being able to respond rapidly anywhere in the city," he said.[71]

Kavanagh also explains, "The massacre also led to changes in police tactics, with officers reconsidering training practices that had them use force only as a last resort. New practices of providing mental health response teams evolved."[72] One additional result of this incident was the up arming of police across the country with more powerful weapons as well as special training for future situations of this kind. Table 4 shows the response time line for the incident. As a side note, this is the largest mass shooting in which the perpetrator did not commit suicide, up until police in the north Hollywood shootout killed Emil Decebal Mătăsăreanu; however, Mătăsăreanu's partner Larry Eugene Phillips Jr did commit suicide.

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[70] Jessica Gresko, "20 Years Later, San Ysidro McDonald's Massacre Remembered," *North County Times*, July 18, 2004, http://web.archive.org/web/20090831002428/http://www.nctimes.com/news/local/article_2ba4343e-7009-54ce-98df-79a23ff8d0d7.html.

[71] Jim Kavanagh, "Slaughter at McDonald's Changed How Police Operate," CNN.*crime*, July 24, 2009, http://edition.cnn.com/2009/CRIME/07/23/california.mcdonalds.massacre/index.html.

[72] Ibid.

Table 4. Timeline of police response for the San Ysidro massacre[73]

4:00 pm first calls to police communications.
4:04 first police dispatch—4 officers and 1 sergeant
4:07 Officer Mike Rosario is first on scene and engages the shooter, requests assistance
4:08 paramedic units being their response, life flight alerted
4:10 command post establish, SWAT callout made
4:19 restaurant is surrounded by police
4:35 first SWAT sniper team arrives
4:45 all perimeter officers relieved by SWAT officers
4:46 two witnesses escape and provide a better description of the shooter and advise that there are people shot inside
5:02 second sniper team deploys
5:04 sniper team asks if they have a green light to shoot to kill
5:05 SWAT team commander enroute to the scene rescinds the green light order
5:13 SWAT team commander arrives on scene gives the green light again
5:17 SWAT sniper on post office roof fires one round killing the shooter.
SWAT enters the building and are soon followed by medical personnel for triage, treatment and transport.

Adapted from: "San Ysidro Massacre: July 18, 1984," *San Diego Union Tribune*, http://www.sandiegouniontribune.com/san-ysidro-massacre/.

Below is a summation of the response as well as the treatment and evacuation:

1. Analysis of response
   - Improper weapons for a siege/barricaded gunmen
   - SWAT term relives on the perimeter, no entry made into an active shooter scene
   - No tactics for a siege/barricaded gunmen
   - No "safe" method for extraction of the wounded from the field
   - No "staging area" for support personnel (e.g., fire department, to wait outside the hot zone).
   - No scene perimeter to keep bystanders and press away from the active scene or the post scene.
2. Treatment and evacuation time

[73] "San Ysidro Massacre: July 18, 1984," *San Diego Union Tribune*, accessed July 12, 2013, http://www.sandiegouniontribune.com/san-ysidro-massacre/.

- No treatment and transport available until the scene was declared safe by law enforcement

C. JANUARY 18, 1986, EDMOND, OK, EDMOND POST OFFICE

At 7 AM on Wednesday, January 18, 1986, Patrick Henry Sherrill, a part-time postal employee, a former marine and Air National Guard handgun instructor, entered the Edmond, Oklahoma Post Office and began shooting his co-workers. This incident tragically became the impetuous for the phrase "going postal," when used in an article for the now defunct *St Petersburg Times* on December 17, 1993. In the article, author Karl Vick speaks of a symposium held by the U.S. Post Office:

> The symposium was sponsored by the U.S. Postal Service, which has seen so many outbursts that in some circles excessive stress is known as "going postal." Thirty-five people have been killed in 11 post office shootings since 1983. The USPS does not approve of the term "going postal" and has made attempts to stop people from using the saying. Some postal workers, however, feel it has earned its place appropriately.[74]

In his article for the *Enid News*, Jeff Mullin refutes the "going postal" phrase:

> Subsequent research, however, has proven postal employees are no more likely to kill their fellow employees than workers in any other industry. Between 1992 and 1998, according to a Washington Post article, only 16 of 6,719 homicides in the work place were committed by post office employees.[75]

According to an article by Justus, "At the time there were seventy-three postal employees in the building."[76] The rampage resulted in 14 killed and six wounded. Mullins, who also wrote an article on the incident, notes, "The whole incident took only 15 minutes. In that time Sherrill fired some 50 rounds of ammunition."[77] Sherrill entered the facility with three weapons, and as he began shooting, he observed some of the postal workers run from a side exit. He chased them and shot them as they tried to flee.

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[74] Karl Vick, "Violence at Work Tied to Loss of Esteem," *St. Petersburg Times*, December 17, 1993.

[75] Jeff Mullin, "Aug.20, 1986: Just an Ordinary Day," *Enid News*, August 19, 2006.

[76] Dale Justus, *Fifteen Minutes of Terror: Massacre at the Edmond Oklahoma Post Office*, (Bloomington, IL: iUniversity, 2011), 33.

[77] Mullin, "Aug.20, 1986: Just an Ordinary Day."

Returning inside the facility he, "bolted several doors closed"[78] and continued to shoot those in the complex. Two of the weapons he used for his rampage were taken from the National Guard armory.[79] As Justus reports, "Most of the employees were out of the building in just over five minutes after the first shots were fired."[80]

Police arrived soon after the shooting began and for 45 minutes to contact Sherrill. An article by Canfield includes the following narrative:

> I stood on the front sidewalk with a few other employees and watched as two policemen ran toward the post office. One positioned himself near the front door. The other ran to the southeast corner of the building near the loading docks, then dodged to the front of my mail truck. He crouched down and peered out.[81]

Blanco narrates the incident, explaining the perimeter that the police established as they waited for the SWAT team to arrive, "With weapons drawn, officers cautiously advanced toward the doors, mostly to assure the killer didn't escape or to help victims who fled. The police would wait for the arrival of the SWAT team to invade the interior." Blanco also explains, "A couple of minutes later, we saw [through the windows] a subject inside the post office walk up and bar the back doors, look out the windows for an instant, then disappear from view. The man was bald-headed and there was blood on his forehead."[82]

Sherrill could be seen from the outside through the windows. Blanco continues his narrative, "Approximately thirty seconds after he walked away [from view], at approximately 0715 to 0720, 1 heard the distinct sound of a muffled gunshot."[83] There were no more gunshots or sightings of the gunman. Eventually, the SWAT team went in

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[78] Ibid.

[79] Jacob V. Lamar, Jr., "Crazy Pat's Revenge," *Time Magazine*, June 24, 2001, http://content.time.com/time/magazine/article/0,9171,144859,00.html.

[80] Justus, *Fifteen Minutes of Terror*, 43.

[81] Juan I. Blanco, "Patrick Henry Sherrill," *Murderpedia*, accessed May 5, 2015, http://murderpedia.org/male.S/s/sherrill-patrick-henry.htm.

[82] Ibid.

[83] Ibid.

and found Sherrill dead. In his article, Canfield reports, "Macy said the police arrived at 7:30 AM Lawmen began moving into the building at 8:30 AM, and heard one final gunshot on their way in."[84] Justus also reports, "Five members of the Edmond SWAT team entered the gallery at 8:35 AM …they also identified Pat Sherrill's body at 8:40 AM."[85]

The first person transported to the hospital was Bill Nimmo, who was taken by a civilian who had been stopped by other postal workers. Canfield quotes a police officer, "The first car I stopped was a white sedan with a women driver. I said 'There has been a shooting and we have a carrier down. Can you take him to the hospital?'"[86] Nimmo was placed in the backseat in the woman's car and was then driven to the hospital, a distance of one mile, while being treated by other workers who were trying to stop the bleeding. Justus notes, "By 7:30 AM the three wounded men were on their way to Mercy Hospital." He explains:

> In a very short time, an AmCare ambulance drove up on the sidewalk between the injured and the building. The emergency personnel worked swiftly to control the bleeding before they placed the three men in the ambulance and headed for Mercy Hospital Trauma Center.

Once again, the actual first responders had initiated the life saving measures for some of their co-workers, as Justus notes, "The doctors at Mercy Hospital said Judy, like Gene Bray, would not have lived another twenty minutes if they had not been treated."[87]

Below is a summation of the response as well as the treatment and evacuation:

1. Analysis of response
   - First responding officers, per protocol, establish a perimeter on the building, make no entry into an active shooter scene
   - Employees were able to provide information/intelligence immediately to police

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[84] Owen Canfield, "15 Die In Post Office Rage," *The News-Journal*, August 21, 1986, 2A.

[85] Justus, *Fifteen Minutes of Terror*, 53.

[86] Ibid., 50.

[87] Ibid., 53.

- SWAT team arrives and per protocol attempts contact inside the building
- SWAT team makes no entry into an active shooter scene
- No "safe" method for extraction of the wounded from the field
- No "staging area" for support personnel (e.g., fire department, which had to wait outside the hot zone).

2. Treatment and evacuation time
   - Co-workers and bystanders, the "first responders," initiated treatment and evacuation of the wounded that fled the building.

D. OCTOBER 16, 1991, KILLEEN TX, LUBY RESTAURANT

During lunch hour on October 16, 1991 at the Luby's restaurant, George Hennard crashed through a window with his pickup truck. Upon exiting his truck, Hennard used two pistols, a Glock 17, and a Ruger P89 to shoot customers. According to an article by Hayes, "Vernon Schrader, a vice president for Luby's Cafeterias Inc., said no employees were wounded or killed."[88] Between 12:39 and 12:51 PM, Hennard shot 50 people, killing 23, and 10 of those with a single shot to the head. During the course of the shooting Hennard could be heard saying, "…was it all worth it?"[89] "This is what Bell County did to me;" and "All women of Killeen and Belton are vipers."[90] Hennard would pass over men to shoot women.

There was an almost immediate response from the police. According to the article by Hayes:

> Five state law-enforcement officials were leading a class for local police officers in a hotel near the restaurant, said Michael Cox, a spokesman for the Texas Department of Public Safety. Only a bank separated the buildings, and the officers ran to the restaurant as soon as they heard the shots, he said.[91]

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[88] Thomas C. Hayes, "Gunman Kills 22 and Himself in Texas Cafeteria," *The New York Times*, October 17, 1991, http://www.nytimes.com/1991/10/17/us/gunman-kills-22-and-himself-in-texas-cafeteria.html.

[89] Ibid.

[90] Ibid.

[91] Justus, *Fifteen Minutes of Terror*.

An article in *The Press-Courier* narrates:

> Three Killeen officers and one Texas Department of Public Safety trooper entered the restaurant about 12:44 PM and started shooting at Hennard. Police also released tapes of radio transmissions that indicate the gunfight lasted about seven minutes. Police have said before that Hennard did not kill anyone after the gunfight began.[92]

Hennard was actively stalking and shooting victims prior to the police arrival for five minutes. Two officers, Kenneth Olsen and Alex Morris, reported that they had fired 35 rounds, which contributed to the "…170 pieces of ballistic evidence…including shell casings, bullet fragments and the weapons."[93] The report in *The Press-Courier* also indicates that Hennard hid in the bathroom and killed himself after being wounded twice by police. The call for medical assistance came immediately after the shooting stopped. *The Press-Courier* quotes, "We need Medevac…ambulance to the front…all the extra help we can get…need as many paramedics as we can muster."[94]

One impact of this incident was that

> in 1995 Texas passed a "shall-issue" gun law, which requires that all qualifying applicants be issued a concealed handgun license (the state's required permit to carry concealed weapons), removing the personal discretion of the issuing authority to deny such licenses.[95]

Suzanna Gratia Hupp, whose parents were killed in the shooting, initiated the campaign for the law.[96] Mrs. Hupp ran for the Texas House of Representatives because of the shooting and served five terms from 1997 to 2007.

Below is a summation of the response as well as the treatment and evacuation:

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[92] "Killeen Recordings Released by Police," *The Press-Courier*, October 24, 1991, http://news.google.com/newspapers?id=RIdLAAAAIBAJ&sjid=2CMNAAAAIBAJ&pg=2979,5254738, 12.

[93] Ibid., 12.

[94] Ibid.

[95] Valrie Plaza, *American Mass Murderers* (Raleigh, NC: Lulu.com, 2015), 234.

[96] Texas Department of Public Safety, "Concealed Handgun Licensing," Texas Department of Public Safety, accessed February 22, 2016, http://www.txdps.state.tx.us/RSD/CHL/index.htm.

1. Analysis of response
   - Officers respond to the sound of gunfire and enter immediately engaging and wounding the shooter and ending the assault.
   - Immediate aid is requested by officers on scene.
2. Treatment and evacuation time
   - Aid begins immediately, fire/EMS had staged during the attack.

E. FEBRUARY 28, 1997, LOS ANGELES, CA, N. HOLLYWOOD SHOOTOUT

On Friday, February 28, 1997, Larry Eugene Phillips Jr and Emil Decebal Mătăsăreanu entered the North Hollywood branch of the Bank of America. Between 9:17 AM and 10:01 AM (for 44 minutes), the two bank robbers entered the bank, secured employees and customers inside the vault, and exited the bank, beginning what was the largest police shootout in modern history. When the shooting finished, the casualty count for police and civilians was 17 injured, including 11 police officers, but none killed. Police killed Emil Decebal Mătăsăreanu and, according to the *Los Angeles Times*:

> Larry Eugene Phillips Jr., shot himself in the head, but it could not be determined whether that bullet killed him or whether another potentially fatal shot fired by police about the same time caused his death, according to the autopsy reports released Thursday.[97]

Phillips and Mătăsăreanu had five rifles and over 3,000 rounds of ammunition in box and drum magazines as well as a pistol. Each was wearing body armor. In a piece for the *Daily News*, Los Angeles Police Department (LAPD) Assistant Chief Michel Moore said, "We had trained for terrorists as part of the Olympics, but this was beyond what anyone thought would ever happen."[98]

Of the rounds fired, the robbers fired approximately 1,100 rounds, many of them armor piercing. The police also fire rounds. As described in an article for the *Whittier*

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[97] Beth Shuster, "Bank Robber Bled to Death, Autopsy Finds," *Los Angeles Times*, April 11, 1997, http://articles.latimes.com/1997-04-11/local/me-47591_1_bank-robber.

[98] Rick Orlov, "North Hollywood Shootout, 15 Years Later," *Whittier Daily News*, February 12, 2012, http://www.whittierdailynews.com/general-news/20120227/north-hollywood-shootout-15-years-later.

Daily News, "More than 300 sworn personnel returned fire with 750 rounds…."[99] Seeing the amount of firepower against them, police, who carried 9mm Berettas with 15-round magazines, saw a need for great firepower than their duty weapons saw a need for a change in tactics. As CNN reported, "...the mismatch prompted Lt. Nicholas Zingo to send officers out for more firepower. The nearby gun shop, B&B Sales, provided two AR-15s, the civilian version of the Army's M-16 assault rifle, a shotgun, and rifles with telescopic sights."[100] This same tactic was used in 1966 at the Texas Tower shooting where rifles were provided to some of the officers from a sporting goods store.

One of the injured officers, Martin Whitfield, reflected back, "I know a lot of the training I went through, my military background helped me stay cool headed but when it came down to it, the last thing I did was open my mouth and pray."[101] Whitfield sustained multiple wounds. "Whitfield was shot four times: in the left arm, left buttock, right thigh and under his right arm," according to a *LA Times* story published six months after the shooting.[102]

Below is a summation of the response as well as the treatment and evacuation:

1. Analysis of response
    - Command and control was initially established via radio, as the incident grew control was limited and eventually nonexistent. Training and experience then took over.
    - Communications became overwhelmed.
    - No time to evacuate citizens or establish a large enough containment perimeter to keep civilians from driving through the final scene as it unfolded.
    - Responding officer's weapons were inadequate for the distance and body armor of the two subjects.

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[99] Ibid.

[100] "Stunned Police, Residents Cope with Aftermath of L.A. Shootout," CNN, March 1, 1997, http://web.archive.org/web/20070521201150/http://www.cnn.com/US/9703/01/bank.shootout/.

[101] Arin Mikailian, "LAPD Honoring Officer Shot in North Hollywood Shootout," *Patch*, September 19, 2013, http://patch.com/california/northhollywood/lapd-honoring-officer-shot-in-north-hollywood-shootout.

[102] Ibid.

- This event led to greater firepower for the police with the purchase of M-16s.

2. Treatment and evacuation time
   - First aid began in the field by responding officers and civilians for the injured. Some evacuations were possible.

F. APRIL 20, 1999, LITTLETON, CO, COLUMBINE HIGH SCHOOL

On the morning of Tuesday, April 20, 1999 at 11:19 AM, Eric Harris and Dylan Klebold, both students at Columbine High School in Littleton, Colorado, began their assault on the high school. For the next 16 minutes, until 11:35 AM, they walked from the outside of the school into the library, killing 10 people in the library, wounding 12, and leaving 34 unharmed. The final casualty count in those 16 minutes was 13 dead and 12 wounded. At 12:08 PM, the two committed suicide, a fact that was not discovered for three additional hours.

To begin the assault, the two placed a firebomb in a field about three miles south of the school, which was set to explode at 11:14 AM. The purpose of this device was to divert firefighters and police away from the school. The two students then drove their cars to the school parking lot. The proceeded to the cafeteria and carried in and placed a bomb made of two 20-pound propane tanks set to explode at 11:17 AM. The pair then returned to the parking lot, according to their plan, to await the explosion. Once the explosion went off, they begin to shoot the fleeing students as they ran from the building. According to an article by Mell and Sztainkrycer, "At one point, law enforcement personnel believed as many as eight perpetrators had seized control of the school in an organized attack."[103]

Columbine High School Resource Officer, Neil Gardner, a Jefferson County Sheriff's deputy, was assigned fulltime to the school. Gardner was sitting in the parking lot having lunch when the pair began shooting other students outside the building. Two students were killed immediately. Deputy Gardner was called to the south side of the

[103] Howard Mell, and Matthew D. Sztajnkrycer, "EMS Response to Columbine: Lessons Learned," *The Internet Journal of Rescue and Disaster Medicine* 5, no. 1 (2004), http://ispub.com/IJRDM/5/1/12573.

school for what was initially reported as a girl hit by a car. He proceeded to the south lot with lights and siren where he came under fire from Harris. Harris and Gardner exchanged gunfire over a distance of 60 feet, Harris with his rifle and Deputy Gardner with his service pistol, and neither struck his target. Harris then fled into the school. Five minutes had passed since the first shootings and two minutes since the radio call to Gardner. As Harris fled into the school, Deputy Gardner called for assistance to the south lot on his police radio. Two deputies responded to the call via the west side of the campus and initiated a rescue of students that were wounded and outside the school building. At the same time, Harris and Deputy Gardner became involved in a second gunfight; however, this time Deputy Paul Smoker also returned fire toward Harris, who then fled back into the building.

According to the governor's commission report, "…six officers from the Jefferson County Sheriff's Office had arrived on scene within minutes after the attack had begun."[104] The commission also points out that three of the officers had observed and exchanged gunfire with at least one of the shooters. The report also notes, "As it is deemed unsafe for paramedics to enter, SWAT members are to extract patients out to R13."[105]

Teacher Dave Sanders was struck with a shotgun blast and was moved into a classroom. Students and another teacher made a sign for the window, "1 bleeding to death"[106] in order to alert responders of the situation. Students administered first aid to Sanders to no avail; he was the only teacher killed.

Referring to the *Columbine Commission Report* and extrapolating from that document the following timeline notes some of the events to demonstrate the time delays involved in the response. Shortly after 2:30 PM, injured student Patrick Ireland crawled to the library windows and climbed out the window where he was caught by SWAT members. There had been explosions in the building as officers arrived on scene and

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[104] Columbine Review Commission, *The Report of Governor Bill Owens*, 38.

[105] Mell, and Sztajnkrycer, "EMS Response to Columbine," 5.

[106] Trent Seibert, "Teacher: Pleas for Help Ignored," *The Denver Post*, November 22, 2000, http://extras.denverpost.com/news/col1122d.htm.

authorities relayed fleeing students' information of the suspects having pipe bombs. A little after 1 PM SWAT teams entered the school. "Student Lisa Kreutz was wounded while in the library, she was finally evacuated at 3:22 PM, along with Ms. Patti Nielson, Brian Anderson, and the three library staff who had hidden in the break room. At 4:30 PM, the school was declared safe, however; at 5:30 PM additional officers were called in, as more explosives were found in the parking lot and on the roof. By 6:15 PM, officials had found a bomb in Klebold's car in the parking lot."[107]

Although prevented from entering the building, the fire department succeeded in evacuating the injured from the scene and turned them over to the large number of private ambulances that had also responded. In this manner, they were successful in triaging wounded on scene, evacuating them, and returning to continue the triage as more wounded were found. According to Mell and Sztajnkrycer, "From an EMS operational standpoint, this was more of a multi-victim scenario than a true mass casualty scenario (generally defined as when the number and needs of the victims overwhelm available EMS resources)."[108]

According to the *Columbine Commission Report* "…within a short time there were more than 1,000 officers and emergency medical personnel on the scene."[109] This became an issue as entry was made into the building. As explained in the *Columbine Commission Report*, "Many members of the teams were from police agencies outside Littleton and Jefferson County. Hence, their knowledge about the building's interior was limited to hasty sketches drawn for them by local officers."[110] Because of the explosions inside the building from the improvised explosives, the school's fire alarm and sprinkler systems were both activated. The commission's report notes, "…indeed, the alarms were not turned off until some six hours later."[111]

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[107] Columbine Review Commission, *The Report of Governor Bill Owens*.

[108] Mell, and Sztajnkrycer, "EMS Response to Columbine," 6.

[109] Columbine Review Commission, *The Report of Governor Bill Owens*, 10.

[110] Ibid., 61.

[111] Ibid., 62.

Below is a summation of the response as well as the treatment and evacuation:

1. Analysis of response
   - There was no immediate entry despite officers having exchanged gunfire with at least one shooter and multiple victims down outside the building as well as shots being heard inside the building.
   - Entry would be delayed with the number of shooters in the building as well as their whereabouts unknown.
   - No command and control for the agencies and over 1,000 personnel that arrived on scene.
   - No staging areas established.
   - No communications capabilities across the multiple response units.
   - Three command posts established to coordinate the response.[112]
   - Self dispatching, self deployment of LE agencies.
   - Delay in entry leading to the death or prolonged lack of treatment for the injured.
2. Treatment and evacuation time
   - Treatment and evacuation began for those that were self-evacuated, assisted or outside the school building.
   - Hasty evacuations of the wounded by medics to private ambulances aided in treatment.
   - Extensive time delay permitting EMS into the school per EMS and police policy based on the scene not being declared safe while the search for additional shooters took place as well as the improvised explosives located and used in the building.
   - None of the injured who were alive when they reached the hospital died.

G. APRIL 16, 2007, BLACKSBURG VA, VA TECH

On April 16, 2007, Seung-Hui Cho, a student at Virginia Tech in Blacksburg, Virginia, succeeded in killing 32 students and professors. Of the 32, two were killed earlier in that morning in one of the dormitories. The remaining 30 were killed in Norris Hall in about nine minutes (9:42–9:51 AM) by Cho, who used a Glock 19 9mm pistol and a Walther P22 .22 pistol. In the end, Cho committed suicide in one of the classrooms.

[112] National Fallen Firefighters Foundation, "Firefighter Life Safety Initiative 12," accessed November 5, 2015, http://www.everyonegoeshome.com/16-initiatives/12-violent-incident-response/.

Cho entered Norris Hall and proceed to chain the three doors closed, leaving a note on one of them that any attempt to open the doors would result in a bomb detonation. According to a report by the Virginia Tech Review Panel, "Cho begins shooting in room 206 in Norris Hall, where a graduate engineering class in Advanced Hydrology is underway. Cho kills Professor G. V. Loganathan and other students in the class, killing 9 and wounding 3 of the 13 students."[113] Cho then went to

> room 204, Professor Liviu Librescu, an Israeli Holocaust survivor, forcibly prevented Cho from entering the room. Librescu was able to hold the door closed until most of his students escaped through the windows, but he died after being shot multiple times through the door. One student in his classroom was killed. Students of Liviu Librescu, 76, an engineering science and mathematics lecturer in at Virginia Tech for 20 years, sent emails to his wife, Marlena, telling of how he blocked the gunman's way and saved their lives, said the son, Joe. 'My father blocked the doorway with his body and asked the students to flee,' Joe Librescu said from his home outside of Tel Aviv. 'Students started opening windows and jumping out.'[114]

From there, Cho moved classroom 211 in Norris Hall where students had blocked the door, slowing Cho down. Upon forcing the door, Cho killed the professor and a student at the door then continued to kill 11 students and shot six others, who survived. Cho returned to room 207 where he wounded two additional students as they blocked the door. Cho then moved to room 206 where he killed two more students, including one who lay across another student shielding and saving the student underneath. The door of room 205 was barricaded; Cho could not force the door and fired into the door but did not hit anyone. A professor on the third floor secured students in his office then went downstairs to investigate; Cho shot and killed him, but none of his student's sustained injuries.

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[113] Virginia Tech Review Panel, *Mass Shootings at Virginia Tech April 16, 2007: Report of the Review Panel, Presented to Governor Kaine, Commonwealth of Virginia*, Virginia Tech Review Panel, 2007, http://www.governor.virginia.gov/TempContent/techPanelReport-docs/FullReport.pdf, 27.

[114] "Israeli Lecturer Dies Shielding Virginia Tech Students from Gunman," *Haaretz News Agency*, April 16, 2007, http://www.haaretz.com/news/israeli-lecturer-died-shielding-virginia-tech-students-from-gunman-1.218227.

In the end, 10–12 minutes after it began, Cho returned to room 211, placed the Glock 19 to his right temple and pulled the trigger ending the rampage. According to the report to the governor, "Cho's shooting spree in Norris Hall lasted about 11 minutes. He fired 174 rounds, killed 30 people in Norris Hall plus himself, and wounded 17."[115] According to an article by Horowitz, "All of the victims had been shot at least three times each; of the 30 killed, 28 were shot in the head."[116]

Virginia Tech police arrived within three minutes of the 9-1-1 call. The quick response was due to a training event being held for the SWAT team. The chained doors allowed them no access until they managed to shoot the lock on the door to the maintenance door. Two police response teams, consisting of officers from multiple agencies, entered the building. One team consisted of five officers and the second of seven officers. The seven-officer team located the five-officer team on the second floor and proceeded to the third floor to continue searching and to prevent crossfire threats. The five-officer team located Cho in room 211. Additionally, they then began the task of rescuing the victims. The after action report indicates that the police officers were used to assist in some first aid. It reads, "Since the scene was not yet secured at this point to allow other EMS providers to enter, the tactical medics quickly instructed some police officers how to use the (Asherman Chest) seal."[117] Also according to the Virginia Tech Review Panel, "The police carried several victims who were still alive to the lawn outside the building, where they were turned over to a police driven SUV that took the first victims to emergency medical treatment."[118]

Below is a summation of the response as well as the treatment and evacuation:

1. Analysis of response
   - PD made a quick arrival due to investigation of earlier shooting by Cho in the dormitory; tactical teams were on campus as a result.

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[115] Virginia Tech Review Panel, *Mass Shootings at Virginia Tech April 16, 2007*.

[116] Sari Horowitz, "8 Minutes after 911 Call, A Rescue from Madness," *Washington Post*, June 22, 2007, http://www.washingtonpost.com/wp-dyn/content/article/2007/06/21/AR2007062102497_2.html.

[117] Virginia Tech Review Panel, *Mass Shootings at Virginia Tech April 16, 2007*, 106.

[118] Ibid., 95.

- Entry was made as quickly as possible. Officers tried three entrances that were locked and had no breeching equipment but did attempt to shoot the locks and chains.
- PD officers establish critical security points inside the building at stairwells in the event this was a multiple shooter incident.
- The exterior containment perimeter was established as the entry teams were inside sweeping the building.
- No PD or Joint ICS was established due to the rapid evolution and ending of the incident. ICS was used in the post investigation.
- Virginia Tech Rescue overheard the shooting call and immediately began establishing a Command Post at their building. Units were staged until the all clear was given by PD.
- Within 10 minutes of the incident emergency notification alerts went out campus wide.
- "It also appears that there was inadequate communication between the police who were clearing the building and those outside guarding the exits."[119]Officers should have escorted the civilians from the building.

2. Treatment and evacuation time
   - Rescue evacuations began as soon as possible by the entry teams using security and carry teams.
   - The initial triage was done by two SWAT medics.
   - Injured were transported away from the scene to waiting medics for triage and transportation.
   - At 10:09 AM the police gave the all clear and EMS personnel entered the building.
   - By 10:51 AM all patients were transported from the shooting scene.

H. FEBRUARY 14, 2008, DEKALB, IL, N. ILLINOIS UNIVERSITY

On Thursday, February 14, 2008, at approximately 3:05 PM CST, Steven Kazmierczak entered Cole Hall (Auditorium 101). At that time, there were approximately 120 students in the hall. From the point where he entered, Kazmierczak walked directly onto the auditorium stage at the front of the classroom. From there, using a shotgun and a

[119] Ibid., 97.

Glock 9 mm pistol, he fired into the gathered students. When he was done, he had fired six shotgun rounds, and 48 pistol rounds. At 3:11 PM, Kazmierczak fired one final time, killing himself. According to a report on the incident, "It is estimated that from the time Kazmierczak started shooting until the time he was reported 'down' and the auditorium declared safe was approximately six (6) to six and one-half (6 ½) minutes."[120] In those brief moments, he had killed five and injured another 17 with gunfire.

It took university law enforcement personnel less than 30 seconds to arrive at the scene once the call was broadcast. At 3:06:07 PM, Northern Illinois University Department of Public Safety (NIUDPS) officers were alerted that there was "a 911 call at Cole Hall saying there has been a shooting. . . ." At approximately 3:06:33 PM, three NIUDPS officers had responded and reported, "Northern 30, we are in the area."[121] In less than five minutes, the senior officer advised dispatch over the radio that the incident was over. At 3:11:42 PM (five minutes after the first 911 call), Ellington reported to the dispatcher, "Shooter's down. Shotguns secure. We need an ambulance and the coroner at Cole Hall." The fire report, indicates, "The Fire Chief arrived at 3:08 PM … The dispatch personnel, doing their support job advised at 3:08:22 PM, Unit 39, 10–4; 47 …we have an ambulance en route."[122]

Law enforcement officers began their job of securing the crime scene, locating injured and witnesses as fire/EMS arrived and began administering to the injured. Police Chief Donald Grady took control of the scene and directed officers to begin attending to the victims. Of note in the response by police officers is the fact that all members of the responding university officers "were cross trained as Emergency Medical Technicians (EMTs) and assisted in the treatment of the wounded as part of their response on entry teams."[123] Chief Grady also had the officers use the Holmes Student Center, for student

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[120] Northern Illinois University, *Report of the February 14, 2008 Shooting at Northern Illinois University*, Northern Illinois University, accessed November 5, 2015, http://www.niu.edu/feb14report/Feb14report.pdf, 13.

[121] Ibid., 3.

[122] Ibid.

[123] E. R. Deisinger (Major, Deputy Chief of Police and Director, Threat Management Services, Virginia Tech Police Department, Blacksburg, VA), personal communication with author.

interviews. Per the department plan, staging of arriving regional assistance was done in the parking lots near the Field House. At 3:21 PM, officers declared the scene safe, which permitted responding units from other jurisdictions, including police and fire, to proceed to the scene and to areas were the wounded were gathered. Per the governor's report regarding incident, "The first victim was transported at 3:26 PM for the short trip to the hospital."[124]

Below is a summation of the response as well as the treatment and evacuation:

1. Analysis of response
   - Operations established immediately in a pre-planned staging area.
   - PD and FD had separate staging areas pre-planned.
   - The shooter committed suicide prior to the police arriving.
   - PD looked for additional shooters while clearing the scene for EMS to enter.
   - PD initiated medical triage, all were trained EMTs.
   - A three layer perimeter was established.
   - ICS was established with PD as command until confirmation of a sole shooter then command switched to FD.
   - ICS command communications was done face to face.
2. Treatment and evacuation time
   - Preplanning had established staging areas.
   - PD were EMT trained and began the triage while still searching for additional shooters.
   - FD as well as PD responded to various ad hoc casualty collection points on campus.
   - Patient information was sent to command who then released units from the staging area.
   - The first transport was done 11 minutes (3:26 PM) after FD was allowed into the scene; the last patient (18) was transported at 4:54 PM.

[124] Northern Illinois University, *Report of the February 14, 2008*.

I. JULY 20, 2012, AURORA, CO, CENTURY 16 MOVIE THEATER

On Saturday, July 20, 2012, between 12:38 AM and 12:45 AM (seven minutes), James Eagan Holmes was in theater 8 of the Century 16 Movie Complex in Aurora, CO. Holmes exited then re-entered the theater via a back exit door. Holmes discharged smoke grenades and began to shoot the patrons in the theater. In seven minutes, Holmes killed 12 and injured 70 (58 from gunfire, four from tear gas, and eight from fleeing accidents). Holmes was taken into custody at the rear of the complex as he was standing at his car. Holmes had purchased a ticket for the movie, and during the movie, he exited the rear exit door and proceeded to his parked car at the rear of the theater. According to Black:

> Back at his vehicle, he donned an assault vest, riot helmet, gas mask, black clothing similar to that of a SWAT officer and grabbed a Smith and Wesson M&P AR-15, two Glock .40 caliber pistols (G22 and G23), a Remington 870 Express Tactical 12-gauge shotgun and tear gas canisters.[125]

Holmes had also set up an elaborate series of booby traps with hand grenades and gasoline in his apartment with the intent of killing anyone who attempted to enter. After capture, Holmes alerted police of the trap, permitting the apartment to be safely cleared of explosives.

The first 9-1-1 call came in at 12:39 AM. A report by TriData Division on the incident notes, "The Public Safety Communications Department handled 6,000 calls instead of the 1,500 on a typical day…"[126] Within 90 seconds they were on scene. At about 12:45 AM, police apprehended Holmes in the rear of the theater at his car, and Holmes offered no resistance.

With Holmes in custody, Aurora Police Department (PD) still believed that there might be additional shooters in the complex. It was announced that the scene was not

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[125] Bryan Black, "Deconstructing the Aurora Colorado Shooting and What We as Responsible Citizens Could Have Done to Help," Imminent Threat Solutions, July 23, 2012, http://www.itstactical.com/centcom/news/deconstructing-the-aurora-colorado-shooting-and-what-we-as-responsible-citizens-could-have-done-to-help/.

[126] TriData Division, System Planning Corporation, *Aurora Century Theater Shooting, After Action Report for the City of Aurora, Colorado*, City of Aurora, Colorado, 2014, https://www.auroragov.org/cs/groups/public/documents/document/025372.pdf, xi.

safe, which stopped the fire department and EMS from closing on the scene more quickly. According to a report by Tri-Data:

> While Aurora police charged into a multiplex theater within three minutes of the first report of a shooting there, more than 20 additional minutes passed before medical personnel arrived at the epicenter, a period when at least one victim was still alive but in desperate need of medical attention, dispatch tapes from that night show.[127]

One other major issue that surfaced almost immediately for the responders was the fact that the incident parking lot for the complex had limited access and egress points. According to Aurora Fire Captain Al Robnett, "They were unable to immediately get closer to the theater because the lot was packed with cars from patrons and police."[128]

The rear door of the theater became an access point to begin moving the wounded from the theater. According to John Ingold, a reporter for *The Denver Post*,

> Sergeant Stephen Redfern, one of the first police on the scene, decided not to wait for ambulances and sent victims to area hospitals in squad cars. His (Redfern's) requests for ambulances to the back of the theater were not immediately met… "after what seemed liked awhile, they were not getting through, So I decided we should start transporting victims in police cars."[129]

Numerous lives were save as well as getting seriously injured victims the help they needed more quickly based on Redfern's decision. In his *Denver Post* article, Ingold states, "Of the 60 victims transported to hospitals after the shootings—many of them in the back of police cars—all but two were saved. One officer, Justin Grizzle made four trips between the theater and hospitals."[130] As reported in the *LA Times*, "Grizzle eventually drove half a dozen victims to the hospital in a vehicle so inundated with blood

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[127] Murphy, and Crummy, "Some of the Most Injured."

[128] Ibid;

[129] John Ingold, "Aurora Police Sergeant Describes Lifesaving Theater-Shooting Decision," *The Denver Post*, October 15, 2013, http://www.denverpost.com/breakingnews/ci_24316871/aurora-police-sergeant-describes-life-saving-theater-shooting.

[130] Ibid.,

he said he could hear it slosh as he rounded corners."[131] A report by the Tri-Data Corporation remarks, "The latest emergency medicine research suggests that speed of getting a gunshot wound victim to a close-by hospital is more important in many cases than the mode of transport or care en route."[132]

There was, however, more problems due to the traffic congestion in the parking lot. As Murphy and Crummy explain, "When rescuers from the fire department finally arrived at the back of the theater to help some of the most critical patients, they were thwarted again by the lack of ambulances for transport."[133]

In the final count for responders for the duration of the incident, "Over 50 detectives, 150 to 200 police officers, 100 FBI, 25 ATF (were) on scene."[134] As a final note to the simple brilliance of improvisation, the responding law enforcement personnel had to deal with a crowd of approximately 1,000 people. The TriData report describes, "Movie patrons were interviewed as witnesses to the event, not as potential suspects. Each was photographed in front of a whiteboard containing their personal information, and given a number for further identification."[135]

Below is a summation of the response as well as the treatment and evacuation:

1. Analysis of response
   - Unified (joint) command established later than sooner during the incident.
   - Eventually the police commander had a fire department liaison on site at the command post.
   - Individual police officers were on the radio asking for medical assistance without going through the proper channels.

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[131] Michael Muskal, and Jenny Deam, "Cop Transporting Movie Shooting Victims Says Blood Sloshed in Car," *Los Angeles Times*, January 7, 2013, http://articles.latimes.com/2013/jan/07/nation/la-na-nn-police-james-holmes-theater-shooting-20130107.

[132] TriData Division, *Aurora Century Theater Shooting*, xii.

[133] Murphy, and Crummy, "Some of the Most Injured."

[134] "Aurora Police Chief Dan Oates on Movie Shooting," YouTube video, posted July 20, 2012 by *7 News*, https://www.youtube.com/watch?v=LF7Fs9TLJog.

[135] TriData Division, *Aurora Century Theater Shooting*, 20.

- Tactical parking for response vehicles was not performed to open roadways in the parking lot.
- Police on scene within 90 seconds.
- Incident occurred at shift change allowing for a greater than normal police response.
- Fire/EMS were limited in their ability to get to the patients due to crowd, traffic congestion, (to include unattended police cars), possible additional shooters, scene not declared safe.
- Access and egress points were not cleared and kept clear.
- Communications center was overwhelmed limiting information flow, messages misunderstood or not passed on.
- The police department and the fire department did not use their interoperable radio system.
- The arrest of the subject was not communicated to the FD possibly limiting their triage capabilities.
- PD was concerned about IED devices and moved crowd from building.
- No staging area for mutual aid responders nor was a Staging Area officers appointed.

2. Treatment and evacuation time

- Police were scooping and going with the wounded to the nearest medical facilities.
- FD was on scene and treating patients within 5:30 minutes.
- Police had transported 19 wounded before the fire/EMS transported the first patient.
- Limited, if any, first aid was administered as the police transported the patients.
- FD had multiple triage locations on scene for treatment and transport as well as treatment and release.
- Officers had no medical equipment in their police cars and had little training.
- It took 52 minutes to have all victims taken to local hospitals despite the chaos.

J. DECEMBER 14, 2012, NEWTOWN, CT, SANDY HOOK ELEMENTARY

On December 14, 2012, at approximately 9:30 AM, Adam Peter Lanza tried the front door of Sandy Hook Elementary School in Newtown, Connecticut. Finding the door locked, he then shot through next to the door and entered the school. Lanza was carrying his mother's Bushmaster XM-15 rifle, a Glock 20 pistol, and a Sig Sauer P226 9 mm pistol that was not fired.[136] A report by Office of the State's Attorney Judicial District of Danbury states, "It is currently estimated that the time from when the shooter shot his way into the school until he took his own life was less than five minutes."[137] In less than 10 minutes until 9:40 AM, he would kill 26 teachers and students, wound two more, and then commit suicide. Lanza had started his killing at home, where he shot his mother as she lay in bed.

Lanza began his shooting by first killing the schools principle and school psychologist as they moved to the hallway to investigate the sound of the window being shot out. Then, Lanza moved to a first-grade classroom 8. The report by the Office of the State's Attorney Judicial District of Danbury notes, "In all, seventeen people were killed in classroom 8. A sixteenth child survived and exited classroom 8 after the police arrived."[138] The same report states, "There were a total of eighty expended 5.56 mm casings seized from classroom 8."[139]

Lanza entered classroom 10 and shot the children as they hid under desks. The *Report of the State's Attorney* describes, "Five children were found, with Mrs. Murphy partially covering one child. Four of the five children were deceased. One of the five

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[136] Office of the State's Attorney Judicial District of Danbury, *Report of the State's Attorney for the Judicial District of Danbury on the Shootings at Sandy Hook Elementary School and 36 Yogananda Street, Newtown, Connecticut on December 14, 2012*, Office of the State's Attorney Judicial District of Danbury, 2013, http://www.ct.gov/csao/lib/csao/Sandy_Hook_Final_Report.pdf, 37.

[137] Office of the State's Attorney Judicial District of Danbury, "Danbury State's Attorney Releases Additional Information on December 14, 2012, Incident at Sandy Hook Elementary School," March 28, 2013, http://www.ct.gov/csao/cwp/view.asp?a=1801&Q=521714.

[138] Office of the State's Attorney Judicial District of Danbury, *Report of the State's Attorney*, 10.

[139] Ibid., 21.

children was transported to the hospital and pronounced dead."[140] It was in classroom 10 that Lanza fired one shot into his head, killing himself. The same report states, "There were forty-nine expended 5.56 mm casings seized."[141]

The report from the Danbury State Attorney's office was released on December 14, 2013. The report shows that in the five minutes that the shooter was active until ending his own life, he had fired 157 rounds from his Bushmaster rifle, and all victims in the classrooms were shot (129 rounds) by 5.56 rounds. The report also stated:

> The Bushmaster was loaded with a 30-round capacity magazine. Fourteen rounds were in the magazine when the Bushmaster was recovered by police. There was one round in the chamber…Recovered from the person of the shooter, in addition to more ammunition for the handguns, were three, 30-round magazines for the Bushmaster, each containing 30 rounds. Located in the area of the shootings were six additional 30-round magazines containing 0, 0, 0, 10, 11, and 13 live rounds respectively.[142]

In less than four minutes, officers from the Newtown police department arrived at the school. The officers located a male "…running along the east side of SHES with something in his hand."[143] Officers believed that there might have been more than one shooter. They proceeded into the school five minutes after arrival and four minutes after hearing the last shot from inside the school. Table 5, adapted from the State's Attorney report shows the timeline based on the dispatch recordings. It has been speculated that upon hearing the police sirens, Lanza ended his life.

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[140] Ibid., 10.

[141] Ibid., 22.

[142] Office of the State's Attorney Judicial District of Danbury, *Danbury State's Attorney*, 139.

[143] Office of the State's Attorney Judicial District of Danbury, *Report of the State's Attorney*, 12

Table 5. Lanza case timeline

First Response Timeline	
Time	**Event**
9:30 am	Shooter is believed to first enter Sandy Hook Elementary School (SHES).
9:35:39 am	First 911 call to Newtown Police is received.
9:36:06 am	911 dispatcher broadcasts shooting at SHES.
9:37:38 am	Connecticut State Police dispatched to SHES.
9:39:00 am	First Newtown police arrives behind SHES.
9:39:13 am	Two more Newtown officers arrive at SHES.
9:40:03 am	Last shot heard. Believed to be shooter suicide.
9:42:39 am	Newtown police reports shooter's car license plate.
9:44:47 am	Newtown police officers enter SHES.
9:46:23 am	Connecticut State Police arrive at SHES.
9:46:48 am	Connecticut State Police enter SHES.

Source: Office of the State's Attorney Judicial District of Danbury, *Report of the State's Attorney*, 11–12.

Additional officers begin to arrive and reacted consistent with current training. An article in the *Huffington Post* describes:

> "Upon arrival, teams of Troopers and Officers formed 'Active Shooter Teams' and immediately entered the school," Vance said in the release. Teams performed rescues of students and staff, removing them to a safe location as they searched for the shooting suspect within the building. The building was evacuated and students walked hand in hand out to a safe location.[144]

Also according to *Huffington Post* article, at Danbury Hospital, "At around 10:30 AM, three patients arrived, one after the other. As a fraction of the medical professionals on hand swung into action, the rest waited tensely."[145]

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[144] David Dunavin, "Medical Examiner: Newtown Shooting Victims Suffered 'Devastating Set of Injuries,'" *Newtown Patch*, January 24, 2013.

[145] "Danbury Hospital Prepared for School Shooting Massive Casualties, Got Few," *Huffington Post*, December 14, 2012, http://www.huffingtonpost.com/2012/12/14/danbury-hospital-school-shooting_n_2304756.html.

Below is a summation of the response as well as the treatment and evacuation:

1. Analysis of response
   - Officers made a tactical decision to delay entry in the belief that there may have been more than one shooter despite hearing gunshots from inside the school.
   - Two command centers were established in separate locations – these appeared to be after the incident and utilized for control over the family reception area and for the criminal investigation.
   - Staging for incoming medical personnel was at the Newtown fire dept.
   - No opportunity to insert EMS into the entry team, it appears that no follow-on team was used nor any opportunity to establish a hot/ warm zone triage area.
   - No need for a hot zone triage area in this incident.
2. Treatment and evacuation time
   - Medics were called for then called off as the building search continued. Once the all clear was given a call for "everybody" was made then called off with only two units requested at 10:04 AM after the scene was evaluated.
   - One ambulance had a patient driven to them by police for transport to a local hospital.

K. CHAPTER CONCLUSION

This chapter visited 10 historic active shooter incidents. Each case stood alone in its activities and responses, yet each case was a catalyst for future incident responses. Law enforcement and fire/EMS responders all learned from these calls, analyzed them, and grew from them. In addition, policies and plans were created or modified based on them. In some instances, they became the paradigm shift for future responses. What also became evident is that responding jurisdictions felt the need to humbly review and prepare formal after action reports that became public knowledge and demonstrated a teachable moment in the sorrow and tragedy to others. There is no doubt that these "lessons learned" reports contribute to the betterment of future tactical field responders.

In the next chapter, we shall look at the responders again and begin with the military historic data and that studies have been produced. We will move on to EMS and law enforcement and the changes occurring within each discipline.

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VI. THE RESPONDERS

> War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty….
>
> — Carl von Clausewitz, *On War*

This chapter starts with information from military studies, moves to the EMS discipline, and finishes with the law enforcement side. In both the EMS and law enforcement portions of this chapter, the military will continue to be the foundation for these two civilian responder disciplines. This chapter also includes an introduction to the concept of bringing a co-entry component to active shooter incidents where security teams of law enforcement are provided to secure a location for the medics to begin their collection of patients, triage analysis, staging and transportation from the initial scene to a general transport area outside the hot zone.

There are a number of issues that must be recognized prior to any discussion concerning an active shooter incident. Like many responder calls for service, the incident is in progress; traffic crashes, fires, robberies, medical calls, for example. In an active shooter incident, there are a number of variables:

- the incident is in progress, there are wounded or dead,
- the location is probably not intimately known by the responders,
- the number of active shooters are unknown or nebulous as well as descriptions,
- the specific subject(s) location is unknown as the shooter(s) are possibly mobile,
- the weapons used are unknown.

In addition to these factors is the dynamic thought patterns of the responders as they close in on the site, their "fog of war." As the responders are moving toward the location, traffic and the never-ending updates from the radio from dispatch and other

responding units are also concerns the responders bear in mind. A partial list, in no particular order, includes:

- the best way to arrive quickly and safely;
- what additional units are responding, from what locations and their travel time;
- based on what is known presently what is the best location for tactical entry, staging, perimeter, the initial command post;
- based on what I presently know are my tools sufficient;
- based on what I presently know, are there sufficient resources responding; and
- what additional resources and assets are available at this time or may be needed to mitigate this initial response

The one thing that allows the responders to make these decisions in this less than perfect scenario is that they are trained and have practiced or responded to similar incidents in the past. The initial key requirement of this type incident is neutralization of the threat(s). Once that is accomplished, if the incident is a mass casualty event, then other requirements include: rescue and eventually recovery, patient transport and accountability, crowd control for interviews of victims, witnesses and scene preservation, and evidence recovery. Having worked as a police field supervisor as a sergeant, lieutenant, and captain, I have observed that responding units are very good at sizing up situations, assuming proper tasks, and needs analysis with minimal supervision. Based on their training and experience, responders work by what can best be described as auto-pilot. That is to say, that each knows her or his jobs, assumes these tasks readily and with command and control in place, and performs competently and professionally. As in all emerging scenarios and certainly in a complex incident such as an active shooter, certain "nudges to the rudder" occur but the response with be generally based on in-place procedures and directives. What must remain on the mind of everyone involved is that information flow is vital. Von Clausewitz explains:

> But the commander in war must commit the business he has in hand to a corresponding space which his eye cannot survey, which the keenest zeal

> cannot always explore, and with which, owing to the constant changes taking place, he can also seldom become properly acquainted.[146]

A. THE MILITARY

The medicine practiced today by the U.S. military on battlefields around the world continues to evolve and has become the leading method taught to civilian trauma centers here in the United States. In a September 2009 presentation entitled, "Battlefield Trauma: Lessons from Afghanistan," Jim Holliman addresses the injuries of battle and the changes that have occurred as a result of improvements in medicine, treatment in the field and the ability to get the wounded to more advanced medical treatment (see Figure 6).

Figure 6. Historical comparison

Source: Jim Holliman, "Battlefield Trauma: Lessons from Afghanistan" [Power Point], 2009, https://www.google.com/search?q=Jim+Holliman%2C+Battlefield+Trauma%3A+Lessons+from+Afghanistan%2C+2009&ie=utf-8&oe=utf-8.

With the wounding of our career military and our "citizen soldiers," the National Guard units deployed in Afghanistan and Iraq, the treatment of traumatic injuries from explosives and gunfire are a school for the various medical personnel who deploy and

[146] "Carl von Clausewitz, On War, 1832, Book 1, Chapter 3," Clausewitz.com, accessed November 5, 2015, http://www.clausewitz.com/readings/OnWar1873/BK1ch03.html#a.

then return home to fill their civilian jobs. Battlefield doctors, nurses, and medics take what is learned on the battlefield and transpose it to everyday life in the emergency rooms and trauma centers around the country. In addition to the medical personnel who are developing their skills are the countless soldiers who return home and assume their roles as law enforcement, paramedics, and firefighters. The skill sets learned in war are conveyed over to civilian responders who deal with traumatic injuries here at home. These skills learned by our citizen soldiers are then being taught to their civilian counterparts who work alongside them in the various responder fields.

To further the discussion of using military casual care knowledge, we must turn to Somalia. Following the 1993 battle for Mogadishu, both the Naval Special Warfare Command and the Special Operations Command began studying tactical combat casualty care (TCCC). According to an article by Cain, "Conventional civilian medicine was not appropriate for optimizing casualty care within the tactical environment."[147] Because of the Naval Special Warfare Command and the Special Operations Command studies, the concept of TCCC guidelines were written and continue to undergo changes as needed. It is on this basis that the care and treatment of injuries has been adopted in the civilian community for pre-hospital care in the field. As can be seen in Holliman's presentation in Figure 6 and discussed below, the first concern of the TCCC program is based on the control of bleeding. Of note in the slide Figure 7 is the last sentence: "**These same priorities would apply to civilian mass casualty situations** [emphasis added]."[148]

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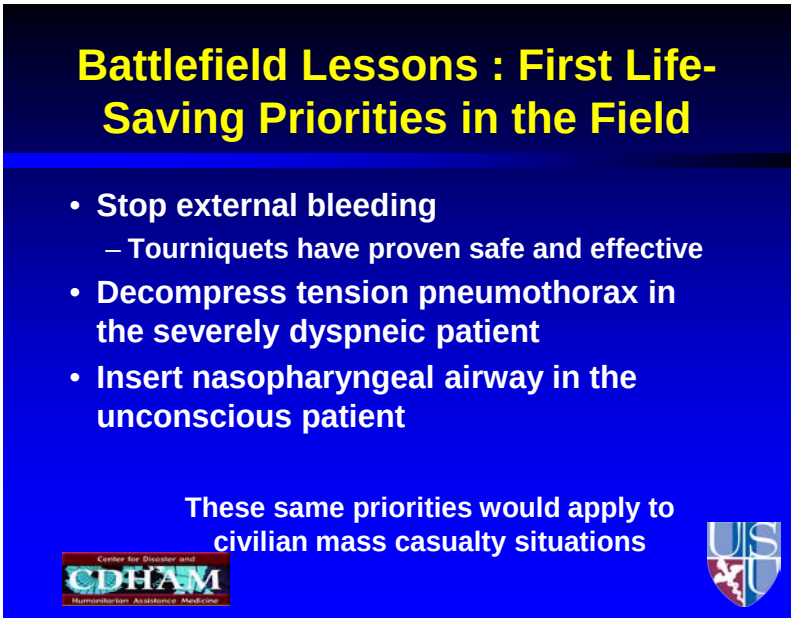
[147] Jeffery S. Cain, "From the Battlefield to Our Streets: How Combat Medicine is Revolutionizing Civilian Prehospital Care," *Journal of Emergency Medical Services* 33, no. 1 (2008), http://www.jems.com/article/major-incidents/battlefield-our-streets.

[148] Jim Holliman, "Battlefield Trauma: Lessons from Afghanistan" [Point Power], Uniformed Services University of the Health Sciences, 2009, https://www.google.com/search?q=Jim+Holliman%2C+Battlefield+Trauma%3A+Lessons+from+Afghanistan%2C+2009&ie=utf-8&oe=utf-8.

Figure 7. TCCC priorities[149]



Source: Holliman, "Battlefield Trauma: Lessons from Afghanistan."

Medics on the battlefield have found that the use of tourniquets, long thought to be a bad idea in the field, were in fact saving lives. Coupled with newer types of pressure bandages, tourniquets continue to prove themselves under battle conditions. Additionally, the use of hemostatic powder agents and treated gauze materials to assist in the clotting of the wounds has surfaced and being used in the field, both in combat and in the civilian world. Further studies, according to Cain's article, recommend to "…utilize Combat Gauze as the primary hemostatic agent, with WoundStat as the backup or when the wound characteristics are more amenable to a granular agent."[150] Cain goes on to discuss airway and breathing needs and needle thoracostomy (simply strategically placing a needle into the chest cavity to release oxygen surrounding a damaged chest causing a tension pneumothorax, a condition that prohibits the lung to inflate due to the air from the wound encasing the lung). The needle procedure allows the restricting air to vent thus allowing the lung to expand and the patient to breathe more easily. According to TCCC practices, next, the responder should address circulation issues, specifically hypovolemic

[149] Ibid.

[150] Cain, "From the Battlefield to Our Streets."

shock, which is described by the National Institutes of Health as "… an emergency condition in which severe blood and fluid loss make the heart unable to pump enough blood to the body."[151] The final step in the TCCC initiative is the evacuation and transport of the patient from the military field of battle to more advanced medical facilities.

During the 2013 International Association of Chiefs of Police (IACP) conference, Dr. Alexander Eastman from Dallas Police Department stated, "TCCC overview job is to make sure that the casualties get to the hospital alive so they can benefit from it."[152] As pointed out by Mark E. Gibbons at the Region II EMS Director's Association Conference in November 2012, "The goals of TCCC are 1. Treat the casualty, 2. Prevent additional casualties and 3. Complete the mission."[153] It is with this concept that the mission of a combined task force response has become a viable way to respond to active shooter incidents.

In an article written for *The Tactical Edge* in the winter, 2010 edition, Dr. Matthew Sztajnkrycer notes, "Experience gained during combat operations in Iraq and Afghanistan indicates that TCCC has saved countless lives in a forward operating environment."[154] Also in his article, Sztajnkrycer quotes from military data, "…61% of all preventable combat deaths are due to bleeding to death from isolated extremity trauma."[155] This provides the foundation for his argument that the control of external hemorrhaging is to precede airway control. This treatment is the application is some sort of tourniquet. Sztajnkrycer does caution, "Based upon the available data, however, the

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[151] U.S. National Library of Medicine, s.v. "Hypovolemic Shock," *Medical Encyclopedia*, 2015, https://www.nlm.nih.gov/medlineplus/ency/article/000167.htm.

[152] Personal notes from IACP Conference.

[153] Mark E. Gibbons, "Applying Combat Medicine to Civilian EMS Operations" (presentation to the Region II EMS Director's Association Conference, Gatlinburg, TN, November 2012), http://www.r2ems.com/pdf/conference_presentations/ 2012//applying%20combat%20medicine%20to%20civilian%20ems%20operations%202012%20v2.2.pdf.

[154] Matthew Sztajnkrycer, "Learning from Tragedy: Preventing Officer Deaths with Medical Interventions," *The Tactical Edge* (Winter 2010): 54.

[155] Ibid., 55.

focus of TCCC on control of life-threatening extremity hemorrhage may be over-emphasized in the law enforcement setting."[156]

Addressing the immediate needs of those who have been injured in an active shooter attack, while the situation is still not under control and the attackers are not isolated, contained, or eliminated, presents its own problems for law enforcement responders. During that time, the only possible medical intervention permitted to responding officers who are intent approaching the source of gunfire is to provide direction to those who are injured or who are able to assist themselves or others. These directions fall under one simple TCCC rule, "…the immediate need to control severe extremity hemorrhage above all other procedures. It is the only medical procedure to be considered during the care under fire phase of tactical medical management."[157]

As can be seen from Figure 8, during Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) the U.S. casualty survival rate has improved dramatically since World War II and Vietnam.

We can see that the performance of the medical personnel, the attention of "battle-field buddies," or even self-treatment, has the ability to increase the life chances of the injured. This treatment seems to be minimally sufficient for the physical trauma inflicted on a shooting victim to possibly sustain them until more advanced skills can address the injuries.

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[156] Ibid.

[157] Ibid., 58.

Figure 8. Comparison of statistics for battle casualties, 1941–2005[158]

Comparison of Statistics for Battle Casualties, 1941-2005

Holcomb et al J Trauma 2006

The U.S. casualty survival rate in Iraq and Afghanistan has been the best in U.S. history.

	World War II	Vietnam	OIF/OEF
CFR	19.1%	15.8%	9.4%

Note: CFR is the Case Fatality Rate – the percent of those wounded who die

Source: Mark E. Gibbons, "Applying Combat Medicine to Civilian EMS Operations," presentation to the Region II EMS Director's Association, Fall Conference, November 2012.

B. EMS RESPONSE

As this paper explores the ability to combine a police and fire/EMS response in an active shooter incident, a look at the EMS role is critical for understanding. There has been a recognized need for trained medical personnel to get to the wounded as quickly as possible; however, historic protocol has halted the entry of EMS until the law enforcement has declared the scene safe. Over the last few years, this protocol has begun to change to one in which medical personnel are moved closer to the scene and in many cases are incorporated into a follow-up team entering behind the initial law enforcement initial personnel.

In January 2013, the National Fallen Firefighters Foundation (NFFF) published a document entitled *Firefighter Life Safety Initiative 12* (FLSI 12). The intent of this document is to advocate for national protocols for use by firefighters as they respond to incidents involving violence. The document is very specific in its attempt to not define "violent incidents" and thus place limits and restrictions on the definition. Within the

[158] Gibbons, "Applying Combat Medicine."

document, it is clear that the definition of such a term is nebulous and fits into a wide category of incidents. This foresight by the writers provides sufficient room to adapt an even broader strategy to the "all hazards" approach in various other situations.[159]

Among the items noted in the FLSI 12, 2007 summit is to:

> Require all Law Enforcement responders that may be responding to a violent incident in your community to use an Incident Management System (IMS); Fire department personnel should communicate, face to face, with the law enforcement personnel on scene.[160]

Without exception, these two items are critical to a proper response to any situation but even more so in a response to violent encounter. Command and control and "battlespace" knowledge is critical to a successful operation. Chaos is rampant in such situations, and it is necessary for responders to get control of such a situation and quickly as possible. This is accomplished by responders' knowledge of their counterparts in the police or fire discipline. This familiarity is built in training and fieldwork and develops a level of trust and a willingness to work together.

The 2007 report from the National Fallen Firefighters Foundation also points out, "Fire departments should work with other agencies to develop and implement joint SOPs/ SOGs for all emergency response personnel (fire, law enforcement, EMS) and dispatchers, including the use of an effective incident management system."[161] The premise of this document falls in line with the guidelines of the *National Response Plan* and the directives of the *Homeland Security Presidential Directive 5* (HSPD-5). In the HSPD-5, the president called for, "coordination structures, capabilities, and resources into a unified, all discipline, and all-hazards approach to domestic incident management."[162] In the 2008 change to the *National Response Framework*, this directive

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[159] National Fallen Firefighters Foundation, *Firefighter Life Safety Initiative 12 Final Report: National Protocols for Response to Violent Incidents Should be Developed and Championed* (Emmitsburg, MD: National Fallen Firefighters Foundation, 2013), http://www.everyonegoeshome.com/wp-content/ uploads/2014/04/FLSI12_FinalReport.pdf.

[160] Ibid., 3.

[161] Ibid.

[162] U.S. Department of Homeland Security, *National Response Plan*.

did not change. Responders to emergencies, from all disciplines and levels, must be capable of working together and should plan on doing so.

In a 2013 article entitled, "L.A. Fire Department Dramatically Overhauls Response to Shootings," writers Robert Lopez and Ben Walsh point out that there is a dramatic change in how firefighters and paramedics respond to active shooters. The city of Los Angeles is now directing that:

> Paramedics and firefighters, protected by armed law enforcement teams, rapidly enter potentially dangerous areas during active shooting incidents to treat victims and get them enroute to hospital trauma centers.[163]

This change, already in the planning stages, came about more quickly due to the incident at Los Angeles airport, a month earlier, in which a gunman shot and wounded a number of people, including Transportation Security Administration officer Gerardo I. Hernandez. It was later determined that Officer Hernandez had sustained numerous fatal wounds from the 12 gunshots he sustained; however, direction for responders has now become, move to the wounded under protection and begin triage and treatment while still in the "hot zone" but guarded by armed officers. It is this type of response plan, known as a rescue task force, consistent with the NIMS definition of a task force: "A combination of single resources assembled for a particular tactical need with common communications and a Leader,"[164] in this case, law enforcement and fire/EMS.

The NFFF paper uses a deadly encounter in Lexington, Kentucky as an example of need for the safety of the responders. Fire Lieutenant (Lt) Brenda Cowan had responded to a medical aid call, and police were dispatched to the same location for a possible shooting. As she attended to the women victims, Lt Cowan was shot along with another responder. A responding police officer succeeded in using his vehicle as a barricade and cover. Lt Cowan was finally moved 45 minutes later by a police tactical

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[163] Robert J. Lopez, and Ben Walsh, "L.A. Fire Department Dramatically Overhauls Response to Shootings," *L.A. Times*, December 22, 2013, http://articles.latimes.com/print/2013/dec/22/local/la-me-ems-response-20131223.

[164] Federal Emergency Management Agency, "ICS Resource Center," accessed November 5, 2015, https://training.fema.gov/emiweb/is/icsresource/glossary.htm#R.

team.[165] Because of this and a firefighter killed in 2004, responders in Lexington have adopted a four-tier model of response.

In a September 2013 paper published by the U.S. Fire Administration, entitled *Fire/Emergency Medical Services Department Operational Considerations and Guide for Active Shooter and Mass Casualty Incidents*, it advocates the key issue that needs to be addressed nationally is

> Local jurisdictions must build sufficient public safety resources to handle AS/MCI scenarios. Local fire/Emergency Medical Services (EMS) and law enforcement (LE) must have common tactics, communications capabilities and terminology to have seamless, effective operations.[166]

It is becoming critical that the public safety responders plan and prepare for mass casualty events.

Arlington County, Virginia is one of many locations agencies across the country that has moved to such a program. As defined in Arlington County Fire Department's standard operating procedure F 28/Category 1, "The Rescue Task Force (RTF) is a set of teams deployed to provide point of wound care to victims where there is an on-going ballistic or explosive threat."[167] This policy dictates that the EMS personnel will be in protective ballistic equipment and under the protection of the police department. Fairfax County, Virginia has also initiated such a plan under the 2011 *Unified Hostile Incident Action Guide*,[168] co-written by both fire and law enforcement personnel.

In their 2004 article, "EMS Response to Columbine: Lessons Learned," Mell and Sztajnkrycer note:

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165 "Firefighter Killed Responding to Fatal Domestic Dispute," *WAV3 News*, February 14, 2004, http://www.wave3.com/Global/story.asp?S=1645438&nav=0RZFKpSf.

166 U.S. Fire Administration, and Federal Emergency Management Agency, *Fire/Emergency Medical Services Department Operational Considerations and Guide for Active Shooter and Mass Casualty Incidents* (Washington, DC: Federal Emergency Management Agency, 2013), https://www.usfa.fema.gov/downloads/pdf/publications/active_shooter_guide.pdf.

167 Arlington County Fire Department, *Standard Operating Procedures*, 1.

168 Fairfax County Police Department, and the Fairfax County Fire and Rescue Department, *Unified Hostile Incident Action Guide*, Virginia Department of Fire Programs, 2011, http://vdfp.virginia.gov/government_affairs/doc/FairfaxCountyPD-FRDUnifiedHostileEventActionGuide.doc.

> In all, one hundred and sixty persons were triaged by Fire and EMS personnel, 24 of whom had serious injuries. These patients were triaged in one of four different sites. Many mutual aid ambulances and EMS personnel were on scene. As a result, prioritizing patients for transport was far easier than would otherwise be expected.[169]

Mell and Sztajnkrycer continue, "…can EMS begin rescue operations simultaneous with SWAT or EOD team activities? Without training as members of these specific teams, the answer is traditionally 'no.'"[170] The article concludes, "The presence of TEMS during the attack would have mitigated the need for SWAT operators to extract the wounded to R13's location for initial care and stabilization."[171] As we are beginning to see now, this is not true. Historically, SWAT medics are part of the team and remain with the team during its operation. They will not stop to assist injured until the tactical mission is complete.

C. LAW ENFORCEMENT

Based on the methods employed by our military in combat areas, the law enforcement profession is adopting tactical combat casualty care (TCCC) procedures. What is the difference between TCCC and hospital case, it is explained by Sztajnkrycer, "In contrast to traditional civilian pre-hospital care, TCCC de-emphasizes airway management and protecting the cervical spine, instead prioritizing the use of tourniquets for control of life-threatening extremity bleeding."[172]

Officers may be the first on a scene and may be the first to render aid to the injured. In addition, they may also be engaged in a gun battle where medical personnel are not able to enter the area for safety reasons. The officers must be able to rely on themselves and the others around them to initiate self or buddy aide or assist a wounded civilian.

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[169] Mell, and Sztajnkrycer, "EMS Response to Columbine," 1.

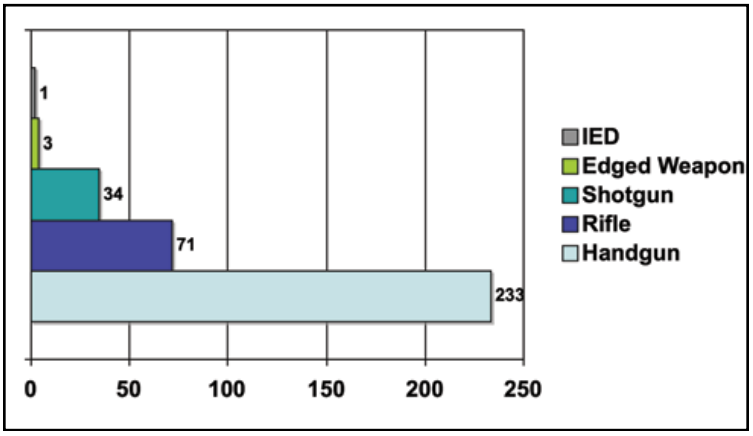
[170] Ibid., 7.

[171] Ibid.

[172] Sztajnkrycer, "Learning from Tragedy," 54.

Using data from the *FBI Uniform Crime Reporting (UCR) Law Enforcement Officers Killed and Assaulted (LEOKA) Program* for the Years 1998–2007,[173] Sztajnkrycer compiled the information seen in Table 6, that indicates that the greatest cause of injury was by handgun and the greatest location of injury was head and chest trauma. Sztajnkrycer notes, "The most commonly identified causes of death were head trauma (198 victim officers) and chest trauma (90 victim officers). 123 deaths were identified as being potentially preventable." The article also points out that the term potentially preventable meant, "In the absence of definitive medical or forensic data, a death was considered potentially preventable if the fatal injury provided the opportunity to either perform a TCCC skill set lifesaving intervention or definitive airway management."[174]

Table 6. Weapons used



Source: Sztajnkrycer, "Learning from Tragedy."

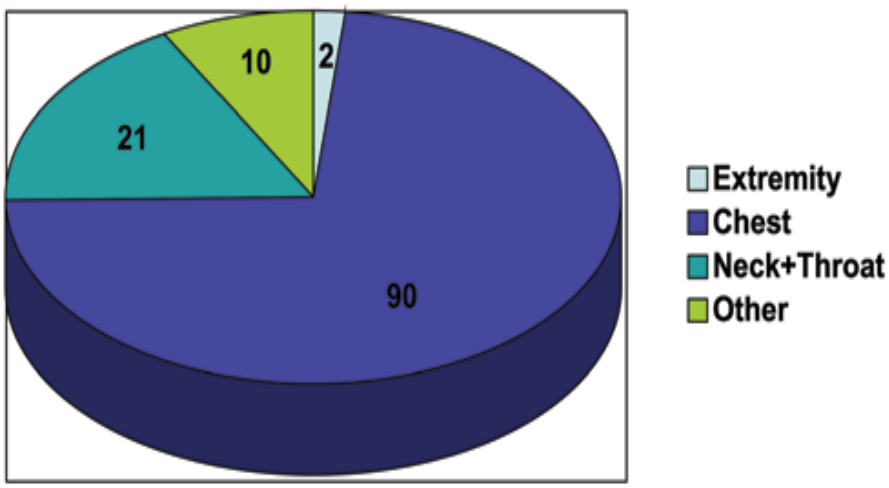
Law enforcement personnel are trained to move to the sound of gunfire and mitigate that threat through any number of means. What law enforcement has not been trained to do, until recently, is stop and address the issue of the injured during a gunfight when sufficient forces are on scene to mitigate that threat. This thesis proposes that additional training for law enforcement be supplied to work in this vein of response. In

[173] Ibid., 54.

[174] Ibid.

fact, many agencies are moving toward this type of framework as it relates to active shooter scenarios. Sztajnkrycer refers to a paper written by Ronald F Bellamy entitled, "The Causes of Death in Conventional Land Warfare: Implications for Combat Casualty Care Research," for *Military Medicine* in 1984. Sztajnkrycer, in his *Learning from Tragedy* paper, adapts Bellamy's information into the chart for causes as seen in Figure 9.[175]

Figure 9. Location of potentially preventable police officer deaths

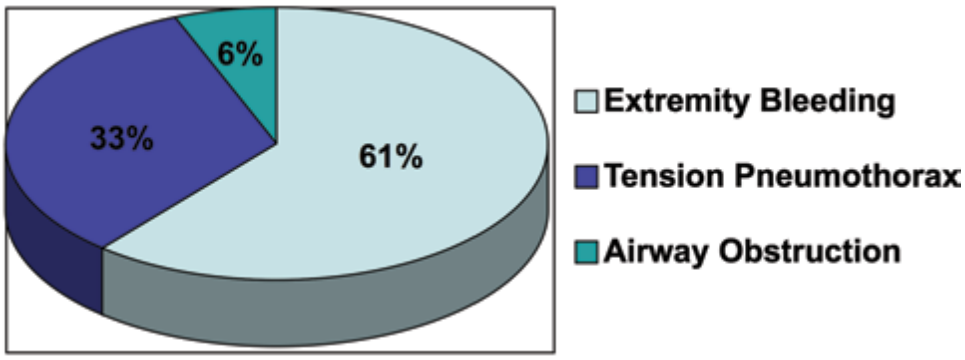


Source: Sztajnkrycer, "Learning from Tragedy."

By issuing officers tourniquets and pressure dressings, officers are able to self-treat or treat a fellow officer in some cases. At best, in an active shooter incident, they could be able to assist the injured if the situation is contained or mitigated in another area of the response location. Figure 10 shows the causes of preventable death in combat. The military relies on planning for combat operations, and as such part of the briefings provided by supervisors to team members contain a number of items: if things go wrong and we must withdraw where is the rally point, and if officers are wounded where do we collect the casualties?

[175] Ibid., 56.

Figure 10. Causes of preventable death in combat



Source: Sztajnkrycer, "Learning from Tragedy."

Knowledge of these two locations (where to rally and where to collect casualties) provide points of gathering for accountability, triage of the injured, weapons and ammunition storage, treatment of the injured, and further planning action. Law enforcement needs to learn that responding to any situation where there are injured falls within their responsibilities. As George Williams puts it, "By viewing it (an active shooter call) as a public safety event, the dramatic benefits of an integrated response with police and fire working synergistically can be achieved."[176]

Officers need to understand the use of the casualty collection point (CCP) and the value it serves when responding to an incident such as an active shooter call. Simply put, a CCP is a location that casualty are safely located at to begin triage and treatment while still in the field and prior to casualty transport to a medical facility. Law enforcement officers are familiar with the concept if they have ever dealt with a large fight or a multi-car accident that may involve numerous injuries. Generally, as first on the scene, law enforcement establishes these areas automatically and directs the medics to these locations so they can begin their jobs. The issue then becomes how law enforcement gets the casualties and the EMS personnel together. In either the large fight or a multi-car accident scene, it is relatively easy; however, execution of that concept in an active

[176] George T. Williams, "Maximizing Life-Safety in Active Shootings, Part 1," *Law and Order*, July 2013, http://www.hendonpub.com/law_and_order/articles/2013/07/maximizing_life_saving_in_active_shootings_part_1, 35.

shooter situation raises a new set of concerns—continuing safety for the injured and additional safety for the EMS personnel.

On January 8, 2011, Congresswoman Gabrielle Giffords was speaking to a small crowd in the parking lot of a Safeway grocery store outside of Tucson, Arizona in Pima County. At 10:11 A.M, a lone gunman opened fire, fired 30 rounds, and struck 19 people, including Congresswoman Giffords. Medics arrived within minutes but were held back by the police for 12 minutes until the scene could be declared safe. However, what was unusual about the scene is that the on-scene deputies, who had received advanced training, were treating the wounded "…MCI (mass casualty incidents) and advanced care procedures…. they treated 10 of the 19 injured patients… The first seven patients were triaged, treated and transported from the scene by 10:35 AM. All were transported by 11:01 AM."[177]

With the potential of an extended response by EMS personnel due to distance, traffic, other priority calls, or hostile scenes where EMS may not enter by protocol, the use of law enforcement officers as trained first aid providers seems to make sense. Falling back on the precedence establish by military battle field care, more law enforcement agencies are beginning to include more advanced combat wound training as part of their training because it is not unusual for law enforcement to be the first on scene for major traffic collisions or tactical situations. For instance, Pima County has created a program, the "First Five Minutes," "to combat the three most common causes of preventable traumatic death: 1) hemorrhage in accessible and controllable regions; 2) hemorrhage in inaccessible or uncontrollable areas; and 3) airway/respiratory management."[178] Pima County also provides officers with the equipment to complete these tasks.

What is important to remember is that there is always a life-safety component for a law enforcement response on every call officers respond to, if not for a citizen then for

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[177] Tammy Kastre, and David Kleinman, "Tactical EMS Saved Lives after Giffords Shooting," *Journal of Emergency Medical Services*, May 2, 2012, http://www.jems.com/article/training/tactical-ems-saved-lives-after-giffords.

[178] Ibid.

another officer, responder, or finally for themselves. Knowledge of treatment is, in the last instance, a truly potential lifesaver.

In a 2014 article written by Elana Gordon, "Philly Police's 'Scoop and Run' Policy May Benefit Most Severely Injured," she points out that the city of Philadelphia has had a standing policy that police officers are permitted and encouraged to bring seriously injured people to the hospitals in their cars rather than take the time and wait on a responding ambulance. According to Gordon, this policy has been in effect for over 20 years and goes on to explain that Dr. Roger Band and some colleagues at the University of Pennsylvania hospital wanted to see if this policy has had any effect on the patient's outcome. The group reviewed the city's record of trauma patients between 2003 and 2007, some 4,122 patients, and they

> didn't find any major difference in overall adjusted mortality rates for patients transported by police versus EMS; and …When zeroing in on those with the most severe injuries. Band's group found police actually "did a little bit better in some of the more critical injured subgroups of patients."[179]

Gordon also noted in the article, "The findings echo a citywide study conducted in the mid-1980s."[180]

After Columbine, law enforcement officers examined new ways to address issues such as they encountered. The immediate deployment into the active shooting zone is such a tactic. Law enforcement officers are now taught to not wait for SWAT but to enter the scene and begin to hunt for the shooter. Of concern is the need to neutralize the attacker(s) and allow medical attention to begin as fast as possible. Another concern is the possibility of a suicide type attack where the attackers do not care about taking hostages but rather try to kill as many as they can. David Cullen, author of "The Four Most Important Lessons of Columbine" has stated, "The active protocol has proved

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[179] Elana Gordon, "Philly Police's 'Scoop and Run' Policy May Benefit Most Severely Injured," *News Works*, January 2, 2014, http://www.newsworks.org/index.php/local/healthscience/63427-philly-polices-scoop-and-run-policy-may-benefit-most-severely-injured.

[180] Ibid.

successful at numerous shootings during the past decade. At Virginia Tech alone, it probably saved dozens of lives."[181]

Tactical medicine in a combat zone is different and will continue to be terribly different that tactical medicine encountered by law enforcement and fire/EMS at home. However, what is the same are many of the wounds sustained by the injured citizens that are encountered by these first responders. From a responder standpoint in an active shooter scenario, law enforcement must first mitigate the dangers to prevent further injury, permit medical personnel to reach the victims to begin treatment, evacuate, and transport the victims. Utilizing the military concept of medicine under fire, law enforcement officers can continue their mission while assisting medical personnel into a "safe" environment to begin to perform their critical job. Together, these two responder entities can become a single responding unit working in harmony, as we shall see in the next chapter.

[181] David Cullen, "The Four Most Important Lessons of Columbine," *Slate*, April 16, 2009, http://www.slate.com/articles/news_and_politics/history_lesson/2009/04/ the_four_most_important_lessons_of_columbine.html.

VII. MODELS OF RESPONSE

This chapters explains some of the predominate methodologies for dealing with active shooter incidents. An attempt has been made to place them in some chronological order; however, the concepts build on each other and co-mingle. They incorporate discipline specific methods for both law enforcement tactical training and EMS suggested protocols. Additionally, the reader can see that many are interdisciplinary based to provide a combined response into an active shooter hot zone in which each responder discipline is able to conduct its specific operations while co-mingled. The strength to these models is that they grow in concepts daily and have and will work in a combined response planning setting and in actual incidents—not only for active shooter incidents but also for any mass casualty scene.

A. ENTER, EVALUATE, EVACUATE

The change in response to active shooters has begun to stress the need to reach the victims in a quicker fashion. As a result, the 2013 Hartford Consensus advocates what is known as enter, evaluate, evacuate (3 ECHO). According to a Mayo Clinic report:

> The 3 ECHO training focuses on establishing secure, safe corridors for firefighters and EMS to enter so they can rapidly assess, stabilize and evacuate injured people to a safe area. It's based on the understanding that most people who are shot or injured die of blood loss and that time is of the essence.[182]

With a rapid response to shooting situations and 3 ECHO training, lives can be saved. In her article, Laura Adelmann points out,

> As officers arrive on scene, they immediately enter the school instead of waiting for backup and begin hunting for the shooter. Police also establish

[182] Mayo Clinic, "Run, Hide, Fight: Responding to an Active Shooter," Mayo Clinic, July 23, 2014, http://www.mayoclinic.org/medical-professionals/clinical-updates/trauma/run-hide-fight-responding-to-an-active-shooter.

> and secure safe corridors for firefighters and paramedics to enter and evacuate injured people even while the shooter is still active.[183]

The shift to a 3 ECHO procedure has come about over time. Support for a change in procedures, which includes 3 ECHO, has been based on the response to the Columbine shooting in 1999. Police procedures at the time dictated that responding officers establish and secure a containment perimeter and wait for SWAT officers to arrive. At Columbine, this policy led to a highly publicized death of one of the teachers, William "Dave" Sanders, who bled to death in a classroom despite the students alerting the responders that he was injured and bleeding to death. It took the responders hours to get to him during which time he died. According to an article in *Fire Chief*:

> Having survived the initial assault, the severely wounded Sanders retreated to an area inside the school, barricaded himself with his students inside a classroom and waited for help. He later died. The after-action report noted that tactical medics could have made a difference.[184]

B. TACTICAL EMERGENCY MEDICINE SERVICES

The consideration for medical support to a law enforcement tactical team began in 1989.

> In 1989 representatives from law enforcement, emergency medicine, and prehospital EMS gathered to develop consensus on the provision of medical support to SWAT teams. The National Tactical Officers Association issued a position statement in 1993 supporting Tactical Emergency Medical Support as "an important element of tactical law enforcement operations. The National Association of EMS Physicians further described medical support of law enforcement special operations in a 2001 position paper.[185]

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[183] Laura Adelmann, "Lakeville School District Staff Train for Active Shooter," *Sun This Week*, September 5, 2013, http://sunthisweek.com/2013/09/05/lakeville-school-district-staff-train-active-shooter/.

[184] Bruce Evans, "The Time for Tactical Medics Has Arrived," *Fire Chief* 53, no. 6 (2009): 20, http://firechief.com/ems-training/time-tactical-medics-has-arrived.

[185] Nelson Tang, and Gabor D. Kelen, "Role of Tactical EMS Support of Public Safety and the Public Health Response to a Hostile Mass Casualty Incident," *Disaster Medicine and Public Health Preparedness*, supplement 1 (2007): s55, s55–s56.

According to Heck, Isakov, and Bozeman:

> The typical uniform worn by EMS personnel will not provide the personal protection necessary to function safely in a tactical law enforcement environment. ... Furthermore, standard EMS protocols prohibit entry of traditional providers into unsecured, threatening environments.[186]

The issue therefore becomes how medical care is provided in a still active scene when the tactically trained medics remain with the tactical teams either on scene or responding but not yet on scene.

In a presentation for the National Collegiate Emergency Medical Services Foundation (NCEMSF), Dr. David W. Callaway describes the tactical emergency medicine services (TEMS) concept, "TEMS is an out of hospital system of care dedicated to enhancing the probability of special operations law enforcement mission success and promoting public safety."[187] The origination of the TEMS concept began with the military after the battle of Mogadishu in Somalia. It is based on the TCCC concept and provides the capabilities of tactically trained field medics assigned and trained with the civilian law enforcement tactical teams. The purpose of the TEMS personnel is to provide medical assistance to the "team members, victims/hostages, bystanders, perpetrators."[188]

C. TACTICAL EMERGENCY CASUALTY CARE

As we have noted in prior sections and chapters of this thesis, the military has played a significant role in the development of medical responses during battle. Arlington County, Virginia has trained its firefighter/EMTs and all of its police officers in tactical combat casualty care (TECC) to give aid to the injured as quickly as possible. The foundation of TECC was the military's TCCC program.

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[186] Joseph J. Heck, Alexander P. Isakov, and William P. Bozeman, "Tactical Emergency Medical Support," in *Emergency Medical Services: Clinical Practice and Systems Oversight, Special Operations Medical Support*, Vol. 4, National Association of EMS Physicians (Dubuque, IA: Kendall Hunt Publishing, 2009), 204.

[187] David W. Callaway, "Tactical Emergency Medicine (TEMS)" (presented at The 13th Annual Conference of the National Collegiate Emergency Medical Services Foundation, February 24–26, 2006, Boston, MA), https://www.ncemsf.org/about/conf2006/presentations/callaway%20-%20tactical%20ems.pdf.

[188] Ibid.

In April 2013, a one-day conference was held in Hartford, Connecticut involving law enforcement, fire/EMS, military, and civilian medical personnel. The purpose of this conference was to determine a strategy of response for active shooter incidents. Relying on military and civilian data, the conference produced a paper called "Improving Survival from Active Shooter Events," which is designed "to promote local, state, and national policies to improve survival in these uncommon, but horrific events."[189]

According to the Hartford Consensus meeting:

> Military experience has shown that the number one cause of preventable death in victims of penetrating trauma is hemorrhage. Tactical Combat Casualty Care (TCCC) programs, when implemented with strong leadership support, have produced dramatic reductions in preventable death.[190]

According to Scott and Schwartz, "TCCC was first introduced to the military in the mid-1990s, and has drastically reduced preventable battlefield deaths due to trauma in Iraq and Afghanistan."[191]

It seems foolish not to have training for both fire and law enforcement in the field. Isolated police units in rural areas would be able to assist the injured rather than waiting for responding medics. Mass casualty incidents could be addressed more quickly and scenarios of active shooters certainly could. The shooting of Gabriel Gifford on January 8, 2011 is another example of the TECC program. The officers on scene at the time of the shooting secured the gunman, secured the scene, and began treating the injured. The responding EMS personnel were held off to stage until the officers on scene were sure that the scene was secure and there were no additional threats.

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[189] Joint Committee to Create a National Policy to Enhance Survivability from Mass Casualty Shooting Events [Joint Committee], *Improving Survival from Active Shooter Events: The Hartford Consensus* (Hartford, CT: Joint Committee to Create a National Policy to Enhance Survivability from Mass Casualty Shooting Events, 2013), http://www.naemt.org/files/lefrtcc/hartford_consensus.pdf.

[190] Ibid.

[191] M. Douglas Scott, and Jim Schwartz, *Police and Fire Departments in Arlington County, VA Create Rescue Task Forces to Speed Medical Care*, Critical Issues in Police Series (Washington, DC: Police Executive Research Foundation, 2014), http://www.policeforum.org/assets/docs/Critical_Issues_Series/the%20police%20response%20to%20active%20shooter%20incidents%202014.pdf.

On November 29, 2009, the *Journal of Emergency Medical Service* (JEMS), published an electronic article entitled, "Arlington County, VA, Task Force Rethinks Active Shooter Incident Response—Task Force Represents a New Medical Response Model to Active Shooter Incidents." In the article Smith and Iselin report that the formation of the TECC concept was based on wound data. They explain:

> TCCC is evidence based and well supported by combat data. The Wound Data and Munitions Effectiveness Team study (1967–1969) examined combat wounds from the Vietnam War and found that approximately 20% of all soldiers killed in action died from extremity hemorrhage, tension pneumothorax or airway obstruction, all of which are readily treatable in the field without extensive equipment or medical support.[192]

As blood loss is the greatest threat in combat as it is in the civilian world, TECC teaches that control of the hemorrhaging is the first priority followed by airway, which is a direct opposite in the civilian medical world. The authors also advocate the use of field tourniquets for civilian wounds because evacuation can be rather quick. They also agree that for non-exsanguinating bleeding, where a tourniquet may not be applied, that the use of blood clotting agents or "hemostatic agents, such as Celox, QuikClot ACS, and HemCon, in conjunction with direct pressure"[193] can be used. Law enforcement can also have its knowledge and capabilities expanded by understand a simple triage method. A TriData report states:

> With time-tested triage methods including START, (START=Simple Triage and Rapid Treatment, while Jump START is the pediatric version) Jump START, or other recognized methods; law enforcement officers should be able to conduct basic triage in hazardous environments.[194]

In what is a growing decision, police officers are being equipped with personal first aid kits to address the possibility of officers themselves becoming victims of gunshot wounds or the need to assist a fellow officer. Furthermore, officers have the discretion of

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[192] E. Reed Smith, and Blake Iselin, "Arlington County, Va., Task Force Rethinks Active Shooter Incident Response: Task Force Represents a New Medical Response Model to Active Shooter Incidents," *Journal of Emergency Medical Services*, December 2009, http://www.jems.com/articles/print/volume-34/issue-12/major-incidents/arlington-county-va-task-force.html.

[193] Ibid.

[194] TriData Division, *Aurora Century Theater Shooting*, 46.

using the kits on civilian wounded. Depending on the items in the kit, the cost for contents and carrier is generally under $100.00 each. While I was at the West Palm Beach, Florida, police department, I assisted in upgrading our trauma kits for approximately $75.00 each. In addition, we provided a block of training during our annual 40-hour in-service training to all officers and equipped each officer with one of the kits. To culminate the training week, on the fourth day, the officers participated in an active shooter Sims scenario to incorporate all that they had learned during the training.

TECC has made such a strong impact across the country that Drs. E. Reed Smith and David W. Callaway co-chair the Committee for Tactical Emergency Casualty Care. According to the Committee for Tactical Emergency Casualty Care, "The TECC initiative was undertaken in order to advance the practice of trauma care in the prehospital civilian environment. To accomplish this, the guidelines are freely available to all."[195]

D. SWARMING

The concept of "swarming" is a two-edged sword. In his thesis, Moody speaks of the Mumbai attack and defines the term as:

> The emergent paradigm envisions multiple terrorist teams armed with assault rifles, military explosives and IEDs attacking civilians in public places. Such tactics are known as 'swarming' and are becoming all too common among terrorist organizations worldwide (Arquilla, 2010).[196]

Whereas in his paper for the RAND corporation, Sean Edwards gives a definition of swarming when he states, "For the purposes of this monograph, a swarming case is any historical example in which the scheme of maneuver involves the convergent attack of five (or more) semi-autonomous (or autonomous) units on a targeted force in some particular place."[197]

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[195] Committee for Tactical Emergency Casualty Care, *TECC Overview*, Committee for Tactical Emergency Casualty Care, accessed November 5, 2015, http://c-tecc.org/images/content/C-TECC-Overview.pdf.

[196] Moody, "Filling the Gap", 26.

[197] Sean J. A. Edwards, *Swarming on the Battlefield: Past, Present, and Future* (Santa Monica, CA: RAND Corporation, 2000), 2.

In scenarios of active shooters in a large footprint, such as a school or office complex, the age-old tactic of swarming comes into play when multiple law enforcement teams enter the target buildings using speed and surprise in a coordinated assault to overwhelm the perpetrators with superior forces and defeat the assailant(s) by overwhelming their decision cycle or what is known as their ability to observe, orient, decide, and act (OODA loop). Murgado explains the OODA loop:

> The OODA loop was created by Air Force colonel John Boyd in the late 1950s. He was a Korean War fighter pilot and a student of combative engagements… Boyd studied the aerial combat outcomes during the Korean War and found that even though U.S. pilots flew inferior jets they still beat their adversaries 10–1. Through further research, he was able to decode the process and learn some critical characteristics about decision-making and reaction time. Boyd concluded that there were only two ways to beat someone in aerial combat: speed up your decision-making (and thus reaction time) or slow down theirs.[198]

The concept of a tactical swarm is based on the ability of multiple teams to enter a large area and concentrate on their individual assigned areas. As French explains, "using a pincer movement (encircle and trap any subjects inside their cordon) and ultimately containing him from several directions."[199] French also discusses bees and wolf attacks. For example, bees can attack from their hive, in multiple waves, from all areas of the compass and concentrate on a single target.

Each entry team is a small element that has a command and control supervisor, organic security, and entry officers to search their assigned areas quickly for the shooter(s) and to provide intelligence for any medical needs within their area. Rescue task force teams can then be deployed as needed. The swarm team continues to move rapidly through the area, and the team is tasked as needed when it becomes available. As the mission progresses, a request can then be made through the chain of command for a security team to oversee the cleared area.

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[198] Amaury Murgado, "Why the OODA Loop is Still Relevant," *Police Magazine*, January 10, 2013, http://www.policemag.com/channel/careers-training/articles/2013/01/why-the-ooda-loop-is-still-relevant.aspx.

[199] Glenn French, "Using the 'Tactical Battle Swarm' in SWAT Operations," *Police One*, November 1, 2012, http://www.policeone.com/SWAT/articles/6034592-Using-the-Tactical-Battle-Swarm-in-SWAT-operations/.

One issue of concern while using a swarm tactic is the potential for police-on-police (blue-on-blue) engagement. Command and control of the team leaders must be very tight and brief before deploying the teams to let them know that they have other law enforcement close to them. Additionally, the tasking orders must be very specific and clear with absolute delineation as to deployment locations and responsibilities. When there are multiple agencies involved in an incident response, each agency is designated an operational area and specific mission within that area, such as a particular building, a set of floors, or specific area of a complex. The benefit to isolating different agencies is that they can communicate to each other on their respective radio frequencies for updates as well as to the unified command post (CP). Communications via radio back to the CP is necessary so that the CP can update all units in the field as needed with intelligence, information, and changes in swarm team locations as needed.

E. RESCUE TASK FORCE

Under the definitions in ICS, the term task force is notes as, "A combination of mixed resources with common communications operating under the direct supervision of a Task Force Leader."[200] In this case, mixed resources would be law enforcement security personnel combined with EMS personnel. As the purpose of the task force would be to locate and treat the injured, the team leader may be the lead or senior medic and the senior law enforcement officer as an advisor. In this way, multiple teams could be placed into the incident for multiple rescue operations. The International Association of Fire Fighters issued a position paper in June 2013 concerning the training for EMS personnel. It states, "…training for all EMS providers should include Tactical Emergency Casualty Care (TECC) concepts and practical skills applications."[201]

In 2008, Dr. E. Reed Smith was attending an active shooter incident training scenario in Arlington County, Virginia as the Arlington County Fire Department's operational medical director. The law enforcement component did its job; it tracked

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[200] U.S. Department of Homeland Security, *IS-100.B: Introduction to Incident Command System, ICS-100*, U.S. Department of Agriculture, 2013, http://www.usda.gov/documents/ICS100Lesson03.pdf, 5.

[201] International Association of Fire Fighters, IAFF *Position Statement*.

located and neutralized the shooter yet the medical component was still outside. Dr. Smith observed,

> Two hours later, we were still staged, and most of the injured were still inside. We could see injured people, but we couldn't go in and get them. Myself and the special operations chief said, "This is ridiculous. We can't just stand around. Why are we not moving in? The threat has been mitigated."[202]

The Arlington plan is simple. Four officers enter the location in search of the shooter, and a second team of four officers enter the building and begin searches for additional shooters and/or improvised explosive devices in a room-by-room plan. A task force team of two medics and two officers follows the second team into a cleared area to begin the triage assessments and immediate treatment to stabilize the injured. An internal casualty collection point is established for transport out of the safety zone. Evacuation movement from the safety zone includes the injured and the task force team, the two medics and the two officers. Iselin and Smith note, "Based on daily staffing in Arlington County, a total of seven RTFs can be formed at any time, each equipped to carry enough supplies to treat up to 14 victims, depending on their injuries."[203]

In an article by Ryan Greenberg, he discusses a meeting hosted by DHS that discussed a number of the issues above. He also mentions that local agencies are concerned about protective equipment the EMS personnel had available when entering into a warm/hot zone to initiate the treatment of the wounded with the task force. Per the article,

> Agencies across the United States have different approaches to this, ranging from those that send medical providers into the warm zone with

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[202] Jenifer Goodwin, "Preparing for the Unthinkable: EMS and Fire Develop Guidelines for Responding to Active Shooter Scenarios," *Best Practices in Emergency Services* 16, no. 9 (2013), http://www.naemt.org/docs/default-source/education-documents/lefr-tcc/lefr-tcc/BP_Sept2013_FINAL.pdf?sfvrsn=0.

[203] Smith, and Iselin, "Toward the Sound of Shooting," 52.

> no additional personal protective equipment to those that have fitted their staff with personal body armor and ballistic helmets.[204]

Potential solutions and their inherent questions range from personal carry to a "cache" carried in a supervisor vehicle with a generic, one-size-fits-all to the cost of the items and whose budget (police or fire) gets touched for the items?

Concerning a possible answer to some of the equipment concerns, the Arlington Task Force provides adjustable Level IIIA tactical vests with Molle webbing that have the fire department (FD) logo on them as well as a rescue task force patch. Additionally, the teams also have a Level IIIA ballistic helmet. Built into to the ICS component, Arlington also has a logistics supply on scene for additional supplies as need for the task force personnel.

Smith and Iselin conclude in their article, "Toward the Sound of Shooting:"

> Risk is nothing new for us; every day, we risk our lives to save people from dangerous situations, doing it with a safety net of protocols, training and equipment. The Rescue Task Force concept does the same, using a safety net to move fire/EMS to a new standard.[205]

F. MULTI-ASSAULT COUNTER-TERRORISM ACTION CAPABILITIES

I shall mention the Multi-Assault Counter-Terrorism Action Capabilities (MACTAC) program only briefly in this paper and only as a further tactic to be considered within the context of multiple locations and multiple attackers as it was designed to combat incidents such as the Mumbai, India incident. This tactic is a consideration for future incidents and should be considered along with a response strategy that will incorporate the medical aspect discussed in this paper.

As a result of the 2008 incident in Mumbai, India in which teams of terrorists attacked multiple locations in the city, law enforcement began looking for ways to combat simultaneous, multiple location attacks. The Mumbai attack occurred in 10

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[204] Ryan P. Greenberg, "Improving Survivability in IED and Active Shooter Incidents," EMS1, last modified January 5, 2015, http://www.ems1.com/columnists/paramedic-chief-column/articles/1977856-Improving-survivability-in-IED-and-active-shooter-incidents/.

[205] Smith, and Iselin, "Toward the Sound of Shooting."

locations throughout the city and resulted with 164 people dead, at least 308 wounded, and millions of dollars of property damage. The attacks began on November 26 and lasted until November 29.

The Los Angeles Police Department (LAPD) is known as one of the most innovative agencies in the United States, if not in the world. It developed the MACTAC program in conjunction with Las Vegas Police Department. The MACTAC project is "developing doctrine to improve our readiness to respond to, and defend the City from attacks similar to that recently experienced in Mumbai (LAPD, 2009)."[206] Deputy Chief Michael P. Downing was given the task of creating a program to counteract a Mumbai style attack in the city and surrounding area. According to an article by Sandeep Joshi:

> The MACTAC programme (sic) provides the LAPD with the ability to provide high-impact squads that will respond to multiple, simultaneous critical incidents in Los Angeles and the surrounding area...It provides for cross-training and training with other agencies.[207]

MACTAC has been introduced across the country and presentations have been made to "64 police departments."[208]

The LAPD believes that the MACTAC program can be a game changer with regard to a multiple location/offender attack. The department states, "The momentum of a MACTAC event can be significantly reduced within the first 30 minutes of the incident."[209] LAPD indicates that its response teams consist of

> contact teams, squads and mobile field forces. Four to seven officers make up a contact team. Three contact teams make up a squad and four squads

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[206] Los Angeles Police Department, "Chief's Message," Los Angeles Police Department, April 2009, http://www.lapdonline.org/search_results/content_basic_view/41809.

[207] Sandeep Joshi, "U.S. Police Provide Training to Thwart 26/11-type Attacks," *The Hindu*, January 20, 2014, http://www.thehindu.com/news/national/us-police-provide-training-to-thwart-2611type-attacks/article5594328.ece.

[208] Ibid.

[209] Los Angeles Police Department, "Planning for a Multi-Assault Counter Terrorism Action Capabilities (MACTAC) Incident," *TACOPS Newsletter*, 6, no. 4 (October 2011): 1, 3, 5, https://wikileaks.org/gifiles/attach/130/130508_October%202011%20TacOps.pdf.

> make up a mobile field force. Contact teams may be involved in assault, rescue, support or protection based missions.[210]

Shortly after the attacks on 9-11 in New York and Washington, New York Police Department (NYPD) Commissioner Ray Kelly initiated a program that has expanded to include NYPD personnel assigned to foreign governments to assist in the sharing of intelligence and information. One of Commissioner Kelly's initiatives under the Counterterrorism Unit was the creation of Hercules teams. These are fast deploying teams of heavily armed police officers that are able to respond anywhere in the five boroughs in minutes. Also in direct response to the Mumbai attacks, Kelly assigned more personnel to assist the emergency service units (ESU). According to Jackson, "Officers from the Organized Crime Control Bureau (OCCB) were chosen to receive additional training in the event of a coordinated attack on multiple locations…."[211]

As stated earlier in this paper, as part of the research design, from August 13–26, 2013, I sent a formal request to clerks in 60 cities or counties for both law enforcement and fire/EMS polices regarding active shooter response. I did not request, nor did I receive any tactical plans. The selected jurisdictions were randomly picked and have population ranges (per the 2013 U.S. Census Bureau) of 17,828 to 1,257,676 for 55 cities and 206,353 to 1,372,171 for three counties. The remaining two agencies were interstate transportation-based, one on the east coast and one nationally. Both of these agencies had policies on active shooters.

Table 7 shows the results of the requests. I do not include the list of the agencies believing that agencies that have or do not have policies need not be disclosed. The date I received the information back is considered non-applicable in that the answer was for tracking purposes only. For the purpose of this information, I either did or did not receive an answer.

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[210] Ibid.

[211] Lucas Jackson, "Inside the NYPD's Counter Terrorism Unit," *Photographer's Blog*, Reuters, September 8, 2011, http://blogs.reuters.com/photographers-blog/2011/09/08/inside-the-nypds-counter-terrorism-unit/

Table 7. Active shooter information requests

Date Requested	A/S Policy	Combined Policy	No Policy	No Answer
8/13–26/2014	11	4	8	41

As can be seen from the data, four agencies not only had their own policies but also had a combined policy for interaction with police and fire responders. Of the 60 requests sent out, I received information that 11 agencies (police or fire) had a current active shooter policy while eight agencies (police or fire) did not have an active shooter policy. Forty-one agencies did not respond. I specifically did not request information on policies from the 10 historic locations used in this paper, yet one city did provide the police policy unsolicited. However, in the course of requesting historic information on the specific cases used, I did have two agencies provide me answers on the three questions. Their information is included in the 60 and listed as a request.

This chapter has reviewed some of the response models for training and actual field use that have been developed and are in use around the United States. It is only through such sharing efforts that agencies and jurisdictions can initiate, grow, and learn from other responders. The next chapter also looks at the command and control model based on the Incident Command System. It includes a brief look at the history and at one application used to incorporate a joint unified command system. The joint unified command is the key as it allows the various responders to fill the tasks required for a response where it seems like everyone is showing up to help.

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VIII. COMMAND AND CONTROL FROM CHAOS

> What I call Platonicity, after the ideas (and personality) of the philosopher Plato, is our tendency to mistake the map for the territory, to focus on pure and well-defined "forms," whether objects, like triangles, or social notions, like utopias (societies built according to some blueprint of what "makes sense"), even nationalities.
>
> — Nassim Nicholas Taleb

We begin this chapter with a quote from Dr. Taleb that focuses on our "tendency" or what may be known as the "we always did it this/that way" fallacy. We seem to want to respond and plan based on what was, rather than what will be. Heuer refers to this as:

> Mirror Image—filling gaps in the analyst's own knowledge by assuming that the other side is likely to act in a certain way because it is how the U.S. would act in similar circumstances. It is an "everyone thinks like us" mindset.[212]

It may be very safe to say that history has demonstrated that some sort of command and control structure has always been in place. This can be demonstrated from the hunter/gatherers to a modern warfare. It is also safe to say that even in the most disorganized event that some sort of a command and control function falls into place. Someone becomes the leader; someone hunts, protects, attacks, or carries out some sort of plan; someone makes a plan; someone tends to the supplies and makes sure there are sufficient things for the village, tribe, or army; and someone makes sure that there is a way to keep tabs on everything. From planning a battle to planning a vacation or wedding, ICS has been used in some form or another.

[212] Heuer, *Psychology of Intelligence Analysis*, 70.

According to TriData Division:

> There are five components to the National Incident Management System (NIMS), including preparedness, communications and information management, resource management, command and management, and ongoing management and maintenance. An ICS is part of NIMS.[213]

Homeland Security Presidential Directive # 5 (HSPD 5) mandates the creation of the National Incident Management System (NIMS). "At the national level, both HSPDs 5 and 8 require all federal, state, regional, local, and tribal governments to adopt the NIMS, including a uniform ICS."[214]

Referring back to my 2009 thesis, I provide an explanation for the NIMS:

> The purpose of the NIMS is to provide a comprehensive and efficient method of all entities working together utilizing a common plan. This system addresses events and incidents of any size, cause, or complexity by providing a set of principles, concepts, technology and terminology that will be consistent nationally. Additionally, the system indicates the use of an ICS, which is consists of the command staff, including the incident commander, a public information officer, a liaison officer (for information flow to other responding agencies), and a safety officer. Under the command staff is the general staff, which consists of the operations section, the planning section, the logistics section, and the finance/admin section. The plan also calls for the ability of multi-agencies to work in a unified command as well as the training to accomplish these goals. In her paper for the Naval Postgraduate School in Monterey, Deirdre Walker points out that prior to 9/11 the law enforcement side of the response team normally, "…had no interaction with fire, public works or public health."[215] This plan can be expanded from the basic ICS structure above to include additional responding stakeholders and agencies to address that very issue. It is important to understand that the ICS structure is to be considered self-sustaining in its response. That is, the ICS responders have a logistics section capable of providing for the needs of the responders and are separate from the emergency operations centers emergency support function.[216]

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[213] TriData Division, *Aurora Century Theater Shooting*, 108.

[214] White House, *Management of Domestic Incidents* (HSPD-5).

[215] Deirdre Walker, "Homeland Security Knowledge Management for Local Law Enforcement in the National Capital Region" (master's thesis, Naval Postgraduate School, 2005), 23.

[216] Tierney, "Law Enforcement Planning and Response," 49.

A. INCIDENT COMMAND SYSTEM

In planned events or unexpected incidents there should be a system of controls for the various tasks that need to be determined and accomplished. As shall be shown in the following chapter there is a command and control system available to address such a needed structure—the Incident Command System (ICS).

1. History

The ICS has been formally adopted in the mid-1970s by the California Wildfire community under a program called FireScope. I offer a concise explanation of the capabilities under ICS in my 2009 thesis:

> The main function of the system is its flexibility, its use of compartmentalized "sections" for command and control, and its performance of specific "functions" to accomplish an overall mission. ICS has tremendous strength in its ability to expand and contract as needed—adding and deleting assets as necessary for an operation. The adaptability of ICS is such that it can be used to plan weddings, vacations, and responses to natural and man-made disasters as well as planned events, such as sports or holiday gatherings. Certain diehards believe that this system is an adapted version of the command and control system originally established by the military to address command, personnel, training, intelligence, and logistics.[217]

ICS is established on a formal command structure divided into two areas, one is the command staff and the other is the general staff. The command staff consists of the following:

> The Incident Commander has overall responsibility for managing the incident. The Incident Commander must be fully briefed and should have a written delegation of authority. Initially, assigning tactical resources and overseeing operations will be under the direct supervision of the Incident Commander.
>
> Public Information Officer, who serves as the conduit for information to internal and external stakeholders, including the media or other organizations seeking information directly from the incident or event.

[217] Ibid.

> Safety Officer, who monitors safety conditions and develops measures for assuring the safety of all assigned personnel.
>
> Liaison Officer, who serves as the primary contact for supporting agencies assigned to an incident.[218]

The next portion of the ICS organization is the general staff for the field personnel consisting of the following:

> Operations Section Chief (OPS) responsible for the tactical operations in the field and the resources needed.
>
> Logistics Section Chief (LSC), who is responsible for having, maintaining and providing resources and services which include needed supplies and equipment as well as ordering items that are not on hand, to include additional personnel (assets) and equipment (resources) as well as the feeding and care of the responders.
>
> Planning Section Chief (PSC) who is responsible for collecting and analyzing information, tracking all the resources, compiling and storing the documentation.
>
> Finance/Administration Section Chief (FSC) who is in essence the bean counter and is responsible for expenditures, any claims made and any compensation.[219]

Within each of these sections are smaller components, as needed, which serve to function toward the higher section needs. Figure 11 denotes a basic ICS command and general officer organizational chart.

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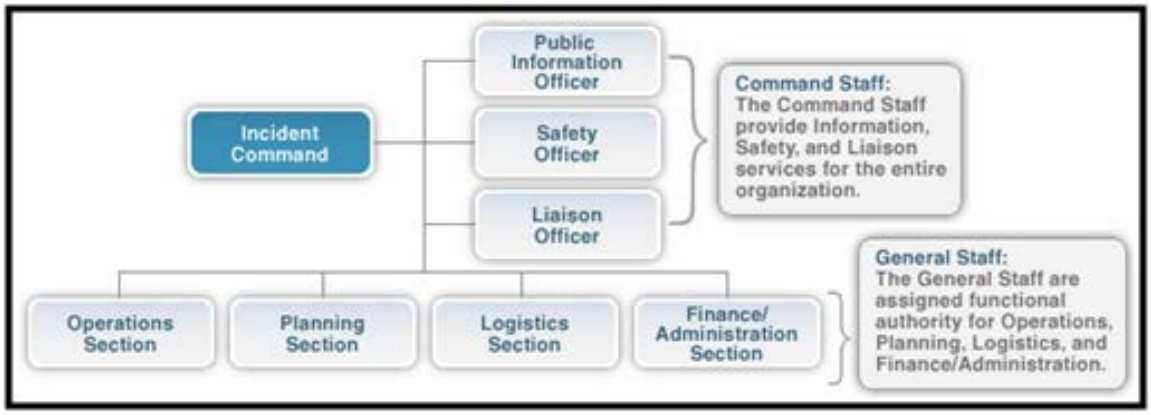
[218] U.S. Department of Homeland Security, *IS-100.B: Introduction*, 5, 7.

[219] Ibid.

Figure 11. ICS command and general officers organizational chart



Source: U.S. Department of Homeland Security, *IS-100.B: Introduction*.

The confusion of responders, or what can be considered the "fog of war," appears to have been demonstrated as a possible issue at the Aurora, Colorado, theater shooting. According to Murphy and Crummy:

> But the dispatch recordings indicate there remained an information disconnect between the fire commander on scene outside and police in the theater… police knew they had several bodies in the theater and scores of patients across the property who needed transport to hospitals or were already on their way in police cars… But a fire commander on the scene estimated at the same time there were just 20 patients throughout the scene who would need hospitalization. "I'm just trying to sort it out right," the unidentified commander said. "I hear 10 here, four here. I'm going to go with 20 right now. Let's just go with 20 people until we get this verified."[220]

2. Application

During a response of the nature and size of an active shooter incident, command and control becomes the critical linchpin for a successful operation. With the countless tasks that must be performed during the response, command and control focuses the responders by giving them purpose and direction. It provides commanders the ability to make the most of what they have on scene and when responding to assist. It also provides them the opportunity to plan for future needs to support their operation. The term "command" and the term "control" are two distinct items. Command is the direction that

[220] Murphy, and Crummy, "Some of the Most Injured."

is provided by the incident commander down to subordinates to accomplish objectives. According to the U.S. Marine Corp, "Control takes the form of feedback—the continuous flow of information about the unfolding situation returning to the commander…."[221] To be executed properly, the process must be interactive with a "push" concept for the information and the decisions. In other words, both ends must push information back and forth to each other rather than one having to "pull" it from the other. Perhaps now, the phrase "lost control" makes more sense if we replace the word control with the word "information"—the commander has lost information or situational awareness.

Three slides, Figures 11, 12, and 13, which were used to instruct a portion of the active shooter training at the West Palm Beach Police Department, can be used to illustrate the response needs for arriving and follow-on units. The information contained in the slides is from me and compiled with information from conversations from various trainers, other agency personnel, and readings of incidents and professional publications as well as classes taught and attended. As the slides are presented and the discussion for the shooting scenario is made, it is important to remember that this teaching is for a one-shooter incident, not a multi-shooter incident. In the event of multiple shooters, such as in Mumbai, each incident becomes its own area of responsibility. Multiple venues can and should be controlled with a single incident commander in what has now become a "complex" operation, which is described as "…any system composed of multiple parts, each of which must act individually according to its own circumstances and which, by so acting changes the circumstances affecting all other parts."[222] Another definition can be found in a paper that was written by Snowden and Boone in November 2007 for the *Harvard Business*. In part,

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[221] U.S. Marine Corps, *Command and Control* (MCDP 6) (Washington, DC: Department of the Navy, 1996), 40.

[222] Ibid., 44.

A complex system has the following characteristics:

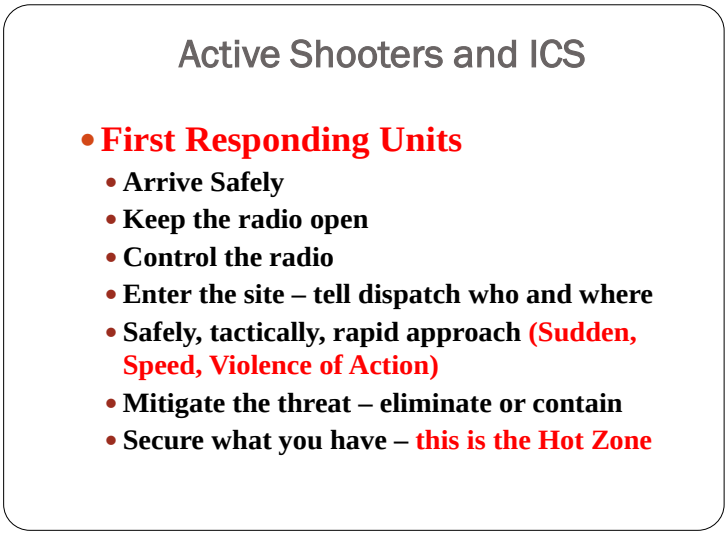
- It involves large numbers of interacting elements.
- The interactions are nonlinear, and minor changes can produce disproportionately major consequences.
- The system is dynamic, the whole is greater than the sum of its parts, and solutions can't be imposed; rather, they arise from the circumstances. This is frequently referred to as emergence.
- The system has a history, and the past is integrated with the present; the elements evolve with one another and with the environment; and evolution
- Is irreversible.
- Though a complex system may, in retrospect, appear to be ordered and predictable, hindsight does not lead to foresight because the external conditions and systems constantly change.
- Unlike in ordered systems (where the system constrains the agents), or chaotic systems (where there are no constraints), in a complex system the agents and the system constrain one another, especially over time. This means that we cannot forecast or predict what will happen.[223]

In this case, per ICS planning, an area command is proper and most effective in such situations.

Using Figure 12 as a reference, in all emergency responses it is critical that the responding units arrive safely; this cannot be stressed enough. If one does not show up, one is of no help, and this may even pull resources away from the scene. Officers should stay off the radio once units advise that they are responding to keep the radio open for command and control information. In some instances, responders may be directed to another channel or in-service units may be moved to another channel. This is done to keep the communications net available to mitigate the situation. In fact, multiple channels may be incorporated for different functions.

[223] David J. Snowden, and Mary E. Boone, "A Leader's Framework for Decision Making," *Harvard Business Review* 85, no. 11 (2007), 3.

Figure 12. First responding units



Once on-scene, advise dispatch and make entry into the scene toward the sound of gunfire or into the chaos. It is critical that responding officers utilize safety and tactics as they enter and get close to the shooter(s). The military and tactical teams refer to the initiation of suppression of a shooter as sudden (or surprise), swiftly, and with violence of action. There can be no hesitation in moving to contain an active shooter; the purpose is to stop the harm for more potential victims. This is done in one of two ways: eliminate the threat or contain the threat. Once the shooter is neutralized or contained in a certain area, this is now established the hot zone.

As seen in Figure 13, the second responding units will perform a number of tasks. Some units may be needed to respond to the shooter or additional shooters as needed. Their protocol will be the same as the first responding units. Eventually, control of the scene will become necessary. The secondary units must understand that there is a great deal of resources on the way. They will need to be managed and directed to best assist with control of the scene. Law enforcement, fire, and most of the field responders should be comfortable with the concept of hot, warm, and cold zones to designate the location. All additional responders will need to be directed as to where they are needed so the establishment of a warm and cold zone is very important. It is also at this time that the various commanders for the responding entities come together to form a unified

command to better control the situation. Based on my experience, commanders have a pressing need to be in close where the action is. It is important that the incident commanders are located away from the immediate scene as best as possible and let their field commanders do their jobs. If they are trained properly and together, this should not be a problem. If they are not performing, they should be replaced. Arriving units must be notified where casualty collection points are located so they can be staffed and secured. They also need to know where witnesses are being collected so they can be tended to and isolated for protection and interviewing. Units need to know where the perimeter is located and where additional units arriving can be staged and called into service as needed. It is important that commanders take into account the proper utilization of the various responding agencies. Commanders should task an agency to handle a particular assignment, such as medical transport and patient accountability, triage assistance, security sweeps for other dangers, perimeter control, staging area control, and traffic control points. Commanders should remember that the responders may need medical assistance.

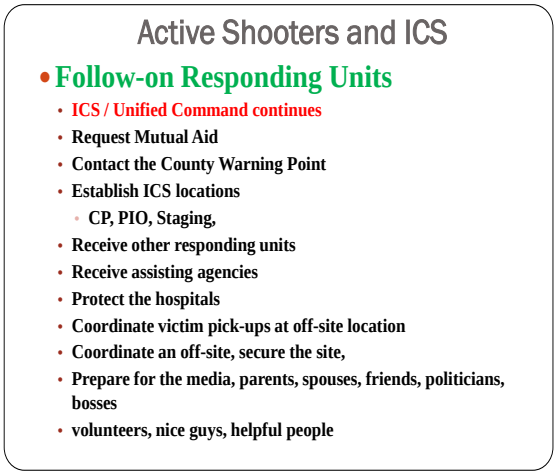
Figure 13. Second responding units

Active Shooters and ICS

- Second Responding Units
  - The location is the initial **hot** zone
  - large outside **cold** perimeter
  - inside **warm** perimeter
  - Collect victims from the site -**CCP's**
  - Locate the FD Cmdr for **Unified Command**
  - Vehicle **access/egress points** for PD, FD, Etc
  - Collect witnesses from the site
  - Exterior Security Sweeps – Columbine, Aurora

Figure 14 illustrates with the use of incident command and additional responsibilities that will be needed at a minimum. Mutual aid from responding communities may be an automatic response or may need to be requested due to memorandums of understandings (MOUs). Pre-planning for large incidents or even routine events such as fairs, concerts, or parades may also require MOUs. Palm Beach County, Florida has located within the Emergency Operations Center (EOC) a "county warning point." All municipalities and other agencies in the county are directed to alert the EOC warning point of issues, routine or emergent, so that assets or resources (people and equipment) can be requested as needed. All entities within the county are then alerted of the situation for their awareness. The initial notification is made via dispatch to the warning point with continuous updates as needed. Incident commanders must also be aware that there may be a need off site for personnel; again, this is a tasking that can be given to other responding jurisdictions. Such sites may include the various receiving hospitals, media locations as directed by the public information officer (PIO), family assembly areas, and other locations.

Figure 14. Follow-on responding units



B. COMBINED RESPONSE OPERATIONS

The fate of the wounded lays with those who apply the first dressing.

— Col. Nicholas Senn, MD, 1844–1908

Nancy Rigg writes in her article about the North Hollywood bank shootout that chaos ruled as command and control was almost nonexistent. She explains:

> LeChasse's first order of business was command and control. "I tried to do a little of that en route by using the radio," he said, "but there was so much traffic on the North Hollywood frequency, I couldn't get through. I tried the tactical frequency they were on to identify who the incident commander was, but there wasn't one at the time." The incident, which escalated at each turn, had drawn everyone into the fray, with no one trying to "pull all of the parts together."[224]

Recent history has shown that the attacks that law enforcement and fire/EMS are responding to are becoming more complex or "hybrid targeted violence."[225] Imagine if the propane tanks at Columbine had exploded in the cafeteria and in Klebold's car in the parking lot. Recall the ambush attack of firefighters in Webster, New York on December 24, 2012 or the explosive booby trap in the Aurora, Colorado shooters apartment. These are some of the scenarios that responders have may face in the future. Frazzano and Snyder speak of this, "firefighters may need to fight fires in a 'hot zone' while a sniper is at large—or the EMS medics need to render 'care under fire,' and police officers may need to confront the threat of fire used as a weapon against them."[226] No longer can we rely on decision making based solely on the past; this heuristic becomes a "best guess or

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[224] Nancy J. Rigg, "From the Archives: Shoot-Out in North Hollywood: Command and Communications," *9-1-1 Magazine*, July 23, 2012, http://www.9-1-1magazine.com/Archives-9709-Rigg-North-Hollywood-Shootout.

[225] Tracy L. Frazzano, and G. Matthew Snyder, "A Paradigm Shift for First Responders: Preparing the Emergency Response Community for Hybrid Targeted Violence," *The Police Chief* 80, no. 5 (May 2013): 36.

[226] Ibid.

a method of decision making based on past experience."[227] According to a report by TriData Division:

> There also needs to be better training of fire and EMS personnel for entering a warm danger zone under police protection. Another consideration is to train police officers in basic combat medic skills, and provide them with a tactical medical kit, which Aurora police now are doing.[228]

With just the three scenarios above, it becomes plain that the use of participatory action research and meetings by both disciplines in a collective process can address problems of these types. In Ernest Stringer's book, he provides a solution:

> One of the strengths of action research is that it accepts the diverse perspectives of different stakeholders—the "theory" each will hold to explain how and why events occur as they do—and finds ways of incorporating them into mutually acceptable ways of understanding events that enable them to work toward a resolution of the problem investigated.[229]

With joint meetings, training, and exercises occurring before incidents the option of creating a policy and sets of procedures for cooperatively dealing with incidents becomes easier. In Jack Matson's book, *Innovate or Die*, he speaks of "intelligent fast failure." To paraphrase this concept as one of creating ideas or innovations (intelligent) and putting them to use either in reality or in a scenario-based situation.[230] The idea is to permit the failures to occur as quickly as possible (fast failure) and modify the concept and create an intelligent design that is sustainable and growable to be able to update as needed. Done over time, in a combined, cooperative setting the participants and decision makers have the benefit of remaining focused on the big picture. In their piece for *Disaster Medicine and Public Health Preparedness*, Drs. Tang and Kelen commented, "It is unlikely that any single component of the public safety infrastructure will be able to effectively and comprehensively respond to those threats posed and casualties inflicted

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[227] Daniel Kahneman, *Thinking Fast and Slow* (New York: Farrar, Straus and Giroux, 2011), 41.

[228] TriData Division, *Aurora Century Theater Shooting*, xiv.

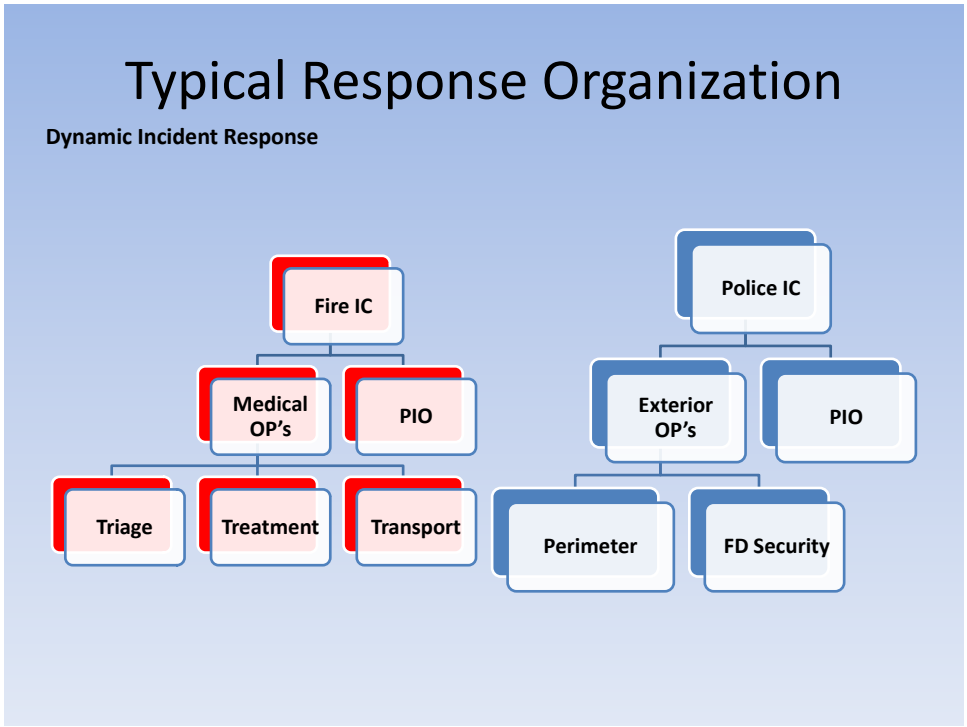
[229] Stringer, *Action Research*, 39.

[230] Jack V. Matson, *Innovate or Die* (Royal Oak, MI: Paradigm Press Ltd, 1996).

during a hostile mass casualty shooting incident."[231] This is demonstrated in Figure 15, which shows a typical response organization for a large incident. According to the U.S. Fire Administration:

> Usually police resources in the initial moments of AS/MCIs are focused on locating, containing and eliminating the threat, thus the local fire/EMS resources should emphasize planning for rapid triage, treatment and extrication of the wounded.[232]

Figure 15. Unified response organization



Source: George Williams, "Combined Rapid Response" (presentation at the Boca Raton Police Department, Boca Raton, FL, 2013).

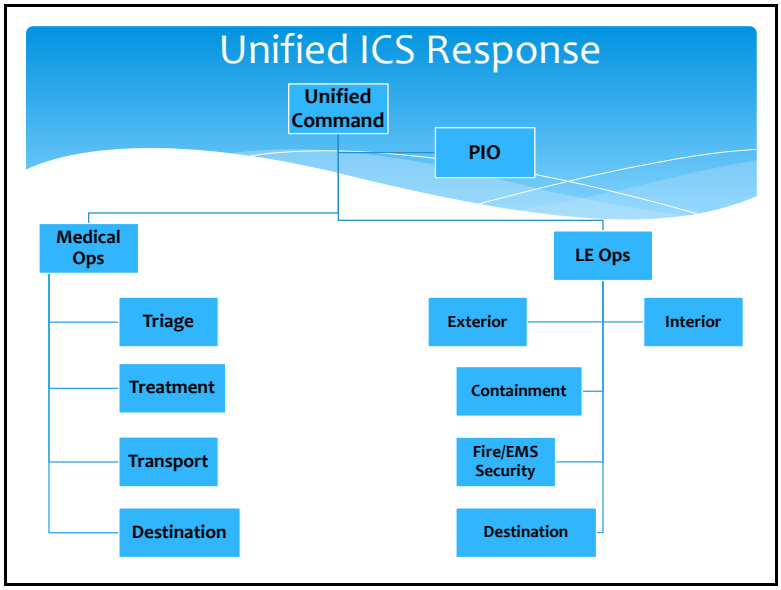
During a 2013 presentation for local police command staff on combined rapid response, at the Boca Raton, Florida police department, George Williams of Cutting Edge Training pointed out that typical law enforcement and fire responses to a scene was

[231] Tang, and Gabor, "Role of Tactical EMS Support," S56.

[232] U.S. Fire Administration, and Federal Emergency Management Agency, *Fire/Emergency*, 9.

generally set up with a discipline specific command structure, as seen in Figure 16.[233] Police has its corner, fire has theirs, and never the twain shall meet. Using a PowerPoint slide, Williams demonstrated what he saw as the organizational chart for such responses.[234] As expected, there was not a lot of disagreement.

Figure 16. Typical response organization



Source: Williams, "Combined Rapid Response."

Williams then reviewed the components of the basic slide for each discipline and then put up a second slide, Figure 15, a very basic combined resource slide that better demonstrates the need and the expectations for a unified command operation.[235] What is not shown are the other sections in a typical ICS organizational chart—liaison, safety, planning, logistics, and admin/finance.

For the Aurora Theater shooting, Figure 17 shows the organizational chart that was used in the after action report to the governor. It shows a basic layout for the

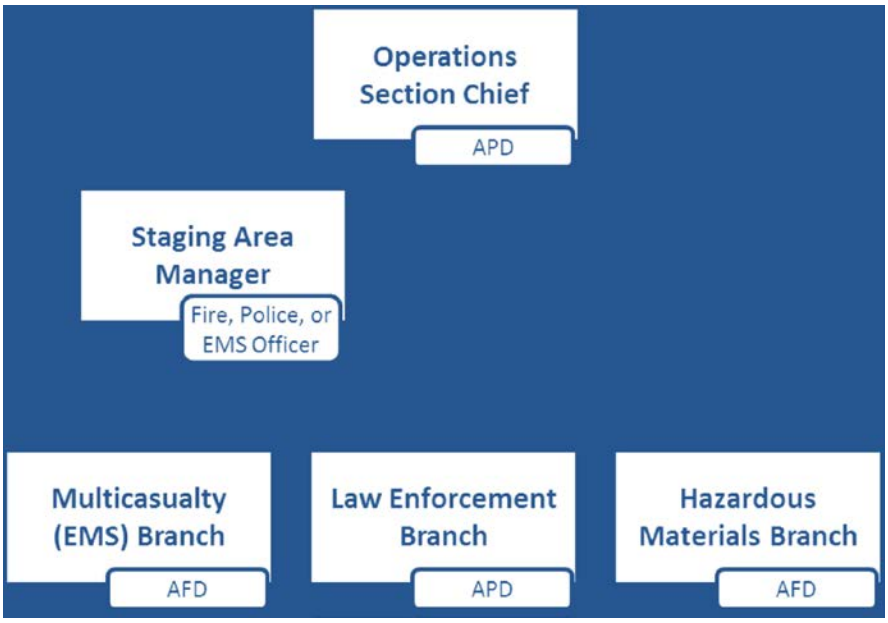
[233] George Williams, "Combined Rapid Response" (presentation at the Boca Raton Police Department, Boca Raton, FL, 2013).

[234] Ibid.

[235] Ibid.

responders and includes the staging area for arriving units so that they do not overwhelm the scene and are used as needed and appropriately. Also in the chart are the three major branches utilized: the EMS, law enforcement, and hazmat. These are functional groups designed to do a specific task. Once operational, they can be sub-divided within ICS standards

Figure 17. Aurora AAR ICS chart



Source: TriData Division, *Aurora Century Theater Shooting*, 108.

An additional consideration that must be taken into account because it will happen is the sheer number of agencies and personnel that will descend upon the incident. Consider Table 8, culled from the after action reports.

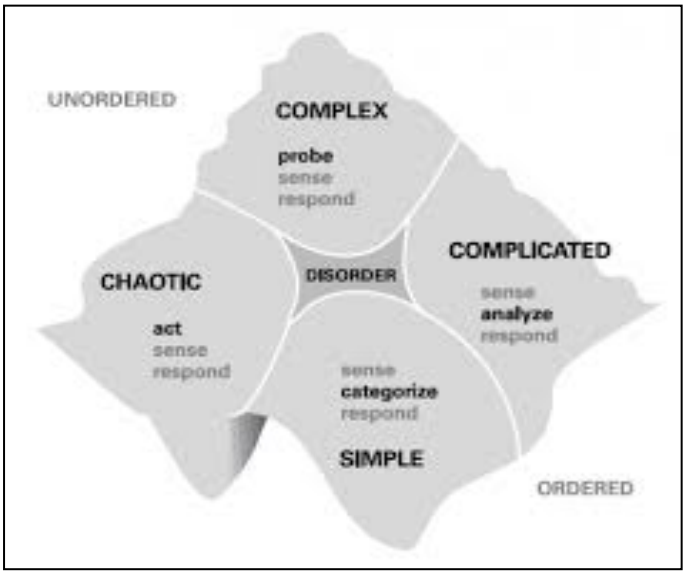
Table 8. Assets and resources

	Assets and Resources		
	Columbine	**Aurora**	**Newtown**
On Duty	LE - not available FD - ~ 32	LE -126 FD - not available	LE -10 init. responders FD - volunteer dept.
Staff Size	LE—Jeffcott - not avail. FD—126 sworn	LE—653 sworn FD—283	LE—45 FD—Newtown 60 vols 5 vol agencies
Police Responders	~1,000 personnel 35 agencies	112 initially	400 + ofcs initially 65 diff. agencies (1,500–2,000 ofcs.)
Fire Responders	50 agencies 172 personnel 48 amb./10 companies	27 ambulances 9 Engs, Tks, Towers	24 Newtown volunteers No other information
Patients	160 triaged 24 transported	~ 82 triaged 60 transported	4 triaged 4 transported
Hospitals	6	7	1
Man Hrs needed	Not Available	Not Available	10,000 security alone 19,200 ($1.27 million, $722,000 for CT S.P.)
Mail	Not Available	Not Available	App. 200,000 pieces
Volunteers	Not Available	Not Available	580 registered

Perhaps now would be a good time to recall the Cynefin diagram from Figure 5 from Snowden, this time (see Figure 18) in a more relaxed format. The response to an active shooter incident falls into the left, the chaotic quadrant of the diagram—in chaos. There is no recognizable pattern, no rhyme or reason to what is occurring. The after action reports for the historic shooting incidents clearly indicate that this is to be expected. The response priority is to “act” at this time, the primary objective is to neutralize the threat, to stop the bleeding, while at the same time begin to receive additional units with some sort of control, deal with the fleeing people and attempt to make some sense out of what is happening. The ultimate goal is to push back through the “complex” quadrant where the mind is probing and searching for the familiar. Although they do exist and demand answers, concepts and issues are emerging quickly without quickly recognized pattern. It is imperative that decision makers at all levels strive to

push through the complex domain and regain the complicated domain as fast as possible. According to Lieutenant Colonel (LTC) David Grossman, "Very little innovative thinking occurs under combat conditions, we must plan and train for the next fight before we're in it."[236]

Figure 18. Cynefin



Source Snowden, and Boone, "A Leader's Framework for Decision Making," 1.

It is here that commanders and supervisors run the risk of falling back on the "we always did it this way" answers rather than move forward with new answers to the new issues and the emerging patterns. DeBono refers to this thinking process as pattern making and explains it as, "The minds process in which incoming data gets organized into a pattern. Unless there are competing patterns, then anything remotely similar to the established pattern will be treated just as if it were that pattern."[237]

From the complex in the Cynefin diagram, it is important to move toward the right hand "complicated" quadrant or what Snowden and Boone refer to in their article

[236] Richard Fairburn, and David Grosman, "Preparing for School Attacks," Killology Research Group, accessed February 12, 2016, http://www.killology.com/schoolattack.htm.

[237] Edward DeBono, *DeBono's Thinking Course* (New York: Facts on File, 1994), 42.

as, "The Domain of Experts."[238] This is where the response phase fits better with the planning phase. It is from pre-training meetings; training, and working together that issues develop into "systems thinking" based on and built from the responders training in their particular disciplines. The term "lateral thinking" comes into play and is explained by DeBono as "… a neutral process. It is an appreciation that any way of looking at things is only one among many possible ways."[239] Another simple way that I understand this process is rather than remain on the road or with the organizational thought processes that can be used, go off-road in the thinking process to discover different routes toward the goal.

While in this "complicated" quadrant, the responders and the supervisors should be relying on the analysis of the incident and responding as well as planning to return to a level above the basics with a reliance on training and experience. Barrett and Fry explain this idea in *Appreciative Inquiry*, "It is assumed that a basic level of normal function exists in any organization, and that the potential—or capacity—for exceptional performance is already embedded within the organization."[240] In very simplistic terms, cops do cop stuff, firefighters do fire stuff, and EMS people do EMS stuff.

The professionals who respond to chaotic scenes eventually develop into pattern thinking, which is not, in most cases, a bad thing. Referring back to Colonel Boyd and his OODA loop, he realized that the winner in an air combat dogfight most often was the pilot that could think faster than the opponent thinks, or one that could decide on a course of action and then initiate the action. Responders must be able to arrive on scene, then observe, orient to the incident, decide on a course of action, and act. It is necessary that the four portions of the loop be correct each time. This process is repeated as quickly and often as needed (see Figure 19).

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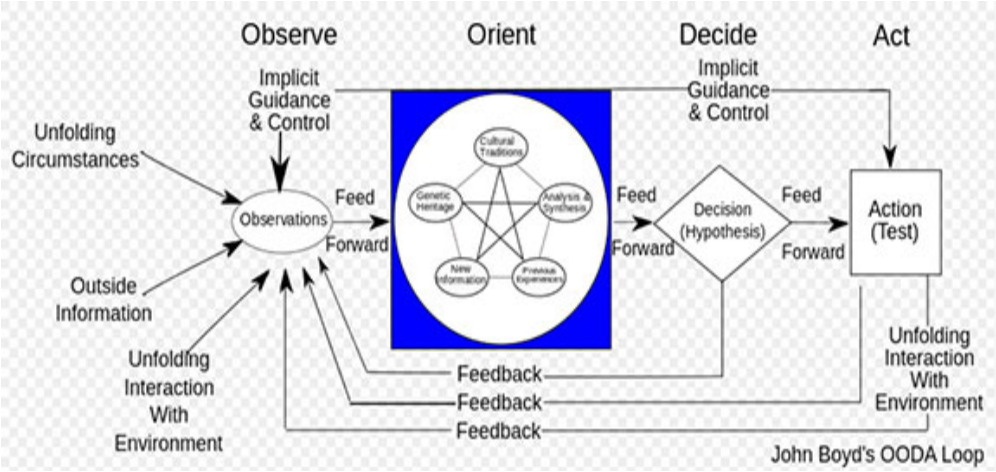
[238] Snowden, and Boone, "A Leader's Framework for Decision Making," 3.

[239] DeBono, *DeBono's Thinking Course*, 70.

[240] Barrett, and Fry, *Appreciative Inquiry*, 19.

Figure 19. OODA loop



Source: Patrick Edwin Moran, "Unlocking the Power of Colonel John Boyd's OODA Loop," April 28, 2015, Pogo, http://www.pogo.org/our-work/straus-military-reform-project/military-people-and-their-ideas/2015/unlocking-the-power-of-john-boyd-ooda-loop.html.

The final component for the interaction between the law enforcement responders and the fire/EMS is the ability to take subsections of each discipline and combine them into a rescue task force (RTF). In ICS vernacular, as noted before, a task force is created by combining different resources into a single team working together to complete a tasking.

Dr. Robert Eastman, speaking at the 2013 IACP conference in Philadelphia, noted that at the Hartford Consensus of 2013, it was found that there are viable solutions to address the issues of active shootings. The participants at the Hartford meeting came up with an acronym of "THREAT" to easily process through an incident:

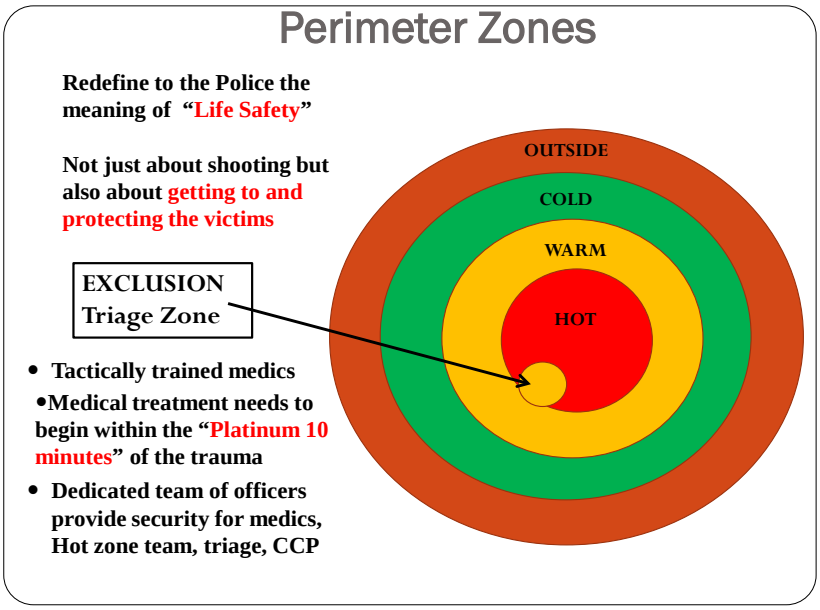
- **T**hreat suppression—using current department standards
- **H**emorrhage control
- **R**apid **e**xtrication to safety
- **A**ssessment by medical providers
- **T**ransport to definitive care[241]

The final figure from the Cutting Edge Technology presentation (Figure 20) demonstrates an exclusion zone, safe triage area established within the hot zone. Trained

[241] Joint Committee, *Improving Survival from Active Shooter Events*.

law enforcement officers escort trained medical personnel into this triage area where the EMS personnel perform their task as the law enforcement personnel provide security. The team enters together and any injured civilians are prioritized and escorted out with medics and security. The task force returns to the exclusion zone with more supplies to continue the mission. The RTF also becomes a casualty collection point for other victims that are located inside the hot zone.

Figure 20. Exclusion zone



Source: Williams, "Combined Rapid Response."

Arlington County, Virginia has developed such a plan. The concept is simple but requires practice with the RTF elements. The beauty to such a plan is that if the course curriculum remains the same, every member of the law enforcement and fire/EMS communities can go through the training and to participate collectively in an incident regardless of with whom they trained.

A sample from the Arlington policy states:

> The Arlington, VA RTF plan for activation is simple. In the event that there is an active shooter incident:

- the first four or five responding police officers quickly form an initial contact team and enter the building; this is the standard police response...
- contact team moves quickly to the sound of the shooter, and relay important reconnaissance information back to command…
- the RTF is formed with two police officers…two medics…move into the building…[242]

> With a small team configuration, a number of RTF teams can be deployed over a large area. Command and control remains with the law enforcement side; however, each medic team will be in communications directly to an EMS command to be able to relay information and receive instructions. The individual teams operate as one with entry and evacuation done intact. As additional teams are formed, they may venture further into the scene and …with the primary mission of evacuating the remaining stabilized victims. They can also be tasked to move further into the building in a "stabilizing but not evacuating" mode to take over for the initial RTF teams that have run out of supplies and begun evacuation.[243]

Therefore, we find that we have returned to a position of action research in cooperatively planning for the various incidents that may occur and specifically for mass casualty events that involve an active shooter component. To return to action research we look again at one of its basic core statements,

> One of the strengths of action research is that it accepts the diverse perspectives of different stakeholders—the "theory" each will hold to explain how and why events occur as they do—and finds ways of incorporating them into mutually acceptable ways of understanding events that enable them to work toward a resolution of the problem investigated.[244]

C. CHAPTER CONCLUSION

This chapter covered three areas: ICS and its history, the application of ICS, and the application of a combined response to an active shooter incident. In the latter, it examined the concept of Cynefin again and the OODA loop for decision making and action dominance. In addition, it included creating an exclusion zone within the hot zone for medical personnel to begin their triage and scene evacuation for treatment and

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[242] Smith, and Iselin, and Blake; 53.

[243] Ibid., 54.

[244] Stringer, *Action Research*, 38.

transport. In addition, the chapter briefly examined the 2013 Hartford Consensus, which provided a number of guidelines for how to respond to an active shooter and the initial first aid demands will present themselves to the responders. Finally, it returned to the concept of participatory action research as a way to continue to develop response plans and procedures based on input from lessons learned around the country and within interdisciplinary meetings that can provide a level platform for local responders to develop plans.

The next chapter begins to close with concluding recommendations. It starts with the initial search for information from various jurisdictions and review that response for information. Next, it looks at the policies that were delivered and glean from them any common core ideas as well as individual answers from the various disciplines.

IX. CONCLUSION

The purpose of this thesis was to investigate and determine an answer to the research question, how can a combined law enforcement (LE) and emergency medical services (EMS) response based on combat medical care be effective in saving lives during an active shooter incident? The daily news, both worldwide and local, is not lacking stories of mass injuries from natural disasters or manmade incidents. This paper looks at a very narrow threat environment, active shooters. Our new worldwide environment demonstrates incidents of explosives, lone wolf attacks, targeting of first responders, and small unit tactics for the advancement of terror. If this new threat consideration is to be coupled with our old threat environment (e.g., transportation accidents, explosions, natural disasters, environmental disasters, manmade disasters), it is absolutely critical that the issue of team responses to such incidents be brought to the forefront.

In his paper, Heuer, states:

> Conceptually driven analysis is on the opposite end of the spectrum from data-driven analysis. The questions to be answered do not have neat boundaries and there are many unknowns. The outcome of the analysis depends at least as much upon the conceptual framework employed to analyze the data as it does upon the data itself. Interpretation is based upon an implicit mental model of how and why events normally transpire in the area for which the analyst is responsible.[245]

It is the primarily responsibility of the government to protect its people. To such an end, we have legislation and directives published. The *National Preparedness Goal* directs that our purpose, that of the government and we the citizens, is to address these issues through published core capabilities. These capabilities become the foundation for the five mission areas of "prevent, protect, mitigation, response, recovery."[246] It is vitally important that we, the citizens, remember "all emergencies/disasters are local." It is the duty of the local government to respond to incidents within its jurisdiction; it will be the

[245] Heuer, *Psychology of Intelligence Analysis*, 60.

[246] Department of Homeland Security, *National Preparedness Goals*.

first to the incident and the last to leave. Therefore, it becomes the responsibility of that jurisdiction to be able to meet the four phases of emergency management—mitigation, preparedness, response, and recovery. When something is mitigated, it is made less severe by lessening its impact. In the instance of mass casualty incidents, such as an active shooter, this is accomplished by a state of readiness or preparedness. We move toward or become prepared by understanding the threats, by being aware, and by training to meet these threats.

As has been demonstrated in this thesis, incidents do occur, and procedures have been and are still being developed and modified on a daily basis to address these attacks on our safety. In addition, areas that were typically separated by responder disciplines are becoming mixed and merged. Where once we had no formal way of responding to active shooters, we now have SWAT teams. Where once we had no medical capabilities on these teams, we now have SWAT medics. Where once we waited for the SWAT operation to conclude, we now have rescue task forces composed of law enforcement and medical personnel capable of operating in a hot zone. We have also seen the development of hasty medical treatment training for responding law enforcement based on the military model. Time is of the essence in active shooter incidents where civilians or responders are injured. The police and EMS/fire families have learned how to play together in the sand box to meet the needs of the citizens that each has sworn to protect.

Greater love hath no man than this,
that a man lay down his life for his friends.

— John 21:25 (KJV)

APPENDIX. RESOURCES

1. ALERRT Program at San Marcos, TX
    a. Level 1—battle first aid
    b. Level II—integrated AS into the training
    c. Hemorrhage control, airway

2. Committee for Tactical Emergency Casualty Care (C-TECC), 19309 Winmeade Drive, Suite 420, Leesburg, VA 20176 www.c-tecc.org; Co–Chairs E. Reed Smith, MD, FACEP (rsmith@arlingtonva.us); and David W. Callaway, MD, MPA, FAAEM dcallawa@gmail.com

3. International Board of Specialty Certification ((IBSC®), 4835 Riveredge Cove, Snellville, GA 30039 https://www.ibscertifications.org/ascerteon/control/about/about-us

4. Cutting Edge Training, 9 Cascade Lane, Bellingham, WA 98229 http://www.cuttingedgetraining.org/; George T. Williams

5. FEMA/DHS course, IS-907: Active Shooter: What You Can Do

6. Hillsboro Fire Department, Hillsboro Oregon, *The Rapid Response & Treatment Model* (R2TM) free to all members of public safety and emergency management agencies; www.ffsupport.org

7. National Fallen Firefighters Foundation; Firefighter Life Safety Initiative 12; FEMA, January 2013
    a. Recommendations
    b. Appendix—Lexington, Kentucky SOP 200.48 Response to Violent or Potentially Violent Incidents

8. Pierce County Sheriff's Office, 930 Tacoma Ave. S. Tacoma, WA 98402 PowerPoint—Active Shooter Response Options

9. Pima County Sherriff's Office, 1750 E. Benson Highway *Tucson, AZ* 85714 - First Five Minutes program

10. Puyallup Police Department, 311 W Pioneer, Puyallup WA 98371; - Rescue Teams—Chief Bryan Jeter, IACP slides

11. Rochester Police Department, 101 4th St SE, Rochester, MN 55902, Police Department Basic Tactical Casualty Care (BTCC) Course

12. Violence Against Law Officer Research (VALOR) project, available at: http://valorproject.org/uploads/Police_Chief_Magazine_-_View_Article.pdf

a. 10,000 law enforcement officers trained

b. Free

c. 2 days

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