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PROSPECTIVE VIGILANCE: ASSESSING COMPLEX COORDINATED ATTACK PREPAREDNESS PROGRAMS

by

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December 2017

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State and local first responders in the United States lack a common strategic approach to prepare for complex coordinated attacks (CCAs). Inconsistent terminology and insufficient guidance from all levels of government and academia complicate matters. State and local agencies face three main barriers to CCA response preparedness: First, the United States has not experienced a CCA like those in Mumbai or Paris; this renders the threat low probability, if high consequence, and thus low priority. Second, preparedness funding in the United States is declining across the board; only high-priority, high-probability events receive necessary funding and attention. Third, if a CCA were to occur today without a unified response plan, first responders would attempt to bring order to chaos; but because this type of event is qualitatively different from those for which responders have trained, such a response could prove to be disastrous.

This thesis analyzed and assessed federal summary reports from current preparedness programs. It surveyed program participants about the programs' value and use. When combined with the federal report examination, the survey results revealed that even without a national CCA strategy, these programs increase participants' preparedness and resilience, and first responders may be adapting to the current threat environment. Three recommendations are provided to help address the findings and augment state and local first responder preparedness before a CCA occurs.

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PROSPECTIVE VIGILANCE: ASSESSING COMPLEX COORDINATED ATTACK PREPAREDNESS PROGRAMS

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ABSTRACT

State and local first responders in the United States lack a common strategic approach to prepare for complex coordinated attacks (CCAs). Inconsistent terminology and insufficient guidance from all levels of government and academia complicate matters. State and local agencies face three main barriers to CCA response preparedness. First, the United States has not experienced a CCA like those in Mumbai or Paris; this renders the threat low probability, if high consequence, and thus low priority. Second, preparedness funding in the United States is declining across the board; only high-priority, high-probability events receive necessary funding and attention. Third, if a CCA were to occur today without a unified response plan, first responders would attempt to bring order to chaos; but, because this type of event is qualitatively different from those for which responders have trained, such a response could prove to be disastrous.

This thesis analyzed and assessed federal summary reports from current preparedness programs. It surveyed program participants about the programs' value and use. When combined with the federal report examination, the survey results revealed that even without a national CCA strategy, these programs increase participants' preparedness and resilience, and first responders may be adapting to the current threat environment. Three recommendations are provided to help address the findings and augment state and local first responder preparedness before a CCA occurs.

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TABLE OF CONTENTS

I. INTRODUCTION....1
- A. PROBLEM STATEMENT....1
- B. RESEARCH QUESTIONS....4
- C. LITERATURE REVIEW....4
- D. RESEARCH DESIGN....11
- E. CHAPTER OVERVIEW....12

II. JCTAWS AND IEMC: BACKGROUND AND FINDINGS....13
- A. INTRODUCTION....13
- B. CCA PREPAREDNESS PROGRAMS....15
- C. JCTAWS AND IEMC OVERVIEW AND COMPARISON....16
- D. JCTAWS....16
- E. IEMC....19
- F. ANALYSIS OF JCTAWS AND IEMC SUMMARY REPORTS....20
  - 1. Key Themes—JCTAWS....23
  - 2. Key Themes—IEMC....26

III. QUALITATIVE DATA ANALYSIS: RESULTS....29
- A. METHODOLOGY....29
- B. PARTICIPANT SURVEY ANALYSIS....31
  - 1. Question 1....32
  - 2. Question 2....33
  - 3. Question 3....34
  - 4. Question 4....36
  - 5. Question 5....36
  - 6. Question 6....37
  - 7. Question 7....39
  - 8. Question 8....40
  - 9. Question 9....41
  - 10. Question 10....42
  - 11. Question 11....43
  - 12. Question 12....45
  - 13. Question 13....46
  - 14. Question 14....48
  - 15. Question 15....49
- C. CHAPTER SUMMARY....53

IV. CONCLUSION 55
A. JCTAWS/IEMC FINDINGS 55
1. Increased Resiliency and Preparedness 56
2. Major Areas/Cities Do Not Have a Unified Plan to Respond to a CCA.....57
3. No Clear Picture on How Many Gaps Have Been Addressed.....59
4. No CCA National Strategy 60
5. First Responders Are Adapting 60
B. NATIONAL POLICY RECOMMENDATIONS.....62
1. National High-Threat Incident Response Institution 62
2. JCTAWS and IEMC Enhancements 63
3. National Leadership Engagement 63
C. LIMITATIONS 64
D. AREAS OF FUTURE STUDY AND RESEARCH.....65
E. CONCLUSION 65

APPENDIX 67

LIST OF REFERENCES 69

INITIAL DISTRIBUTION LIST 73

LIST OF FIGURES

Figure 1. Question 1: Agency Disciplines.....33

Figure 2. Question 2: Other Disciplines Represented during Program Exercise.....34

Figure 3. Question 3: Other Programs.....35

Figure 4. Question 4: Prior Awareness of Gaps.....36

Figure 5. Question 5: Gaps Identified in Self-assessment.....37

Figure 6. Question 7: Program Level of Difficulty.....40

Figure 7. Question 8: Program Value.....41

Figure 8. Question 9: Program Comprehensiveness.....41

Figure 9. Question 10: Program Follow-up.....42

Figure 10. Question 12: Recommendation Implementation.....46

Figure 11. Question 13: Program Effect, Resiliency.....47

Figure 12. Question14: Program Effect, Preparedness.....48

Figure 13. Question 15: Terms Associated with further CCA Preparation.....52

Figure 14. Map of Resources that Responded to the Pentagon Attack on 9/11.....59

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LIST OF TABLES

Table 1. Example JCTAWS/IEMC Capability Gap Matrix 67

Table 2. Mission Areas and Core Capabilities.....67

Table 3. IEMC Core Assessment Criteria.....68

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LIST OF ACRONYMS AND ABBREVIATIONS

CCA	complex coordinate attack
EMS	emergency medical services
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
HTV	Hybrid Targeted Violence
IED	improvised explosive device
IEMC	Integrated Emergency Management Course
JCTAWS	Joint Counterterrorism Assessment Workshop Series
MCI	mass-casualty incident
MOU	memorandum of understanding
NCTC	National Counterterrorism Center
NPG	National Preparedness Goal
NPR	National Preparedness Report
NPS	National Preparedness System
NYPD	New York Police Department
POC	point of contact
START	National Consortium for the Study of Terrorism and Response to Terrorism (University of Maryland)

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EXECUTIVE SUMMARY

State and local first responders in the United States lack a common strategic approach to preparing for complex coordinated attacks (CCAs).[1] Scholarly research, analysis, and shared best practices are important pillars to help first responders become better prepared and resilient, yet these components are mostly absent from the CCA narrative. Inconsistent terminology and insufficient guidance from all levels of government and academia complicate matters, which further complicates CCA preparedness for state and local jurisdictions. For these reasons, the current domestic approach to CCAs requires further inquiry.

Since the terrorist attacks on the United States in 2001, numerous government reports have addressed preparedness, including the 2004 9/11 Commission Report and the 2003 Gilmore Commission report, which identified "a lack of clear strategic guidance from the Federal level about the definition and objectives of preparedness and how States and localities will be evaluated in meeting those objectives."[2] The threat of a CCA and the destruction experienced in the Mumbai and Paris attacks demand that the United States get the solution to this problem right.

There are three main points to the CCA issue that have implications for state and local governments. First, the United States has not experienced a CCA like those in Mumbai or Paris; this renders the threat low probability, if high consequence, and thus low priority. Given these inferences, it is difficult to establish a national CCA policy and get first responders and public safety leaders to fully embrace, fund, and accept CCA preparedness if an attack has not occurred in the United States. Second, and perhaps as a direct consequence to the first point, preparedness funding in the United States is declining across the board; only high-priority and high-probability events receive

[1] For the purposes of this research, first responders are members of any discipline that has an emergency response mission, such as fire and rescue, law enforcement, and emergency medical services.

[2] Gilmore Commission, *The Fifth Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction—V. Forging Americas New Normalcy: Securing Our Homeland, Preserving Our Liberty* (Santa Monica, CA: RAND, 2003), http://www.rand.org/nsrd/terrpanel.html.

necessary funding and attention. For example, since 2008, federal funds to support state and local response efforts have decreased by $662 million.[3] Further, the White House's 2018 fiscal year budget calls for a $582.8 million reduction. Should this reduction occur, such programs as the newly formed Complex Coordinated Terrorist Attacks program and the Countering Violent Extremist Grant would be eliminated.[4] Third, if a CCA were to occur today without a unified plan, first responders would attempt to bring order to chaos, just as the first responders did on 9/11; but, because this type of event is qualitatively different from those for which we have trained, such a response could prove to be disastrous. In the Mumbai and Paris CCAs, local agencies faced significant challenges with incident command, strategic communication, and information management; limitations in both training and equipment; and inadequate response protocols.[5] In sum, these challenges added to the confusion of an unfolding multi-site attack scenario.

This thesis analyzed and assessed thirty-four federal summary reports from the Joint Counterterrorism Assessment Workshop Series (JCTAWS) and the Integrated Emergency Management Course (IEMC): Preparing Communities for a Complex Coordinated Attack programs, which support state and local agencies preparing for a CCA. Further, an anonymous survey was conducted of participants 2011–2016 JCTAWS and IEMC participants in order to assess the effects of the course and analyze barriers to implementation of recommendations. This project provides five comprehensive findings

[3] The analysis was conducted from fiscal year 2008–2016 through an open source at www.dhs.gov. This data was derived from allotted grant dollars within the State Homeland Security Program and the Urban Area Security Initiative. In 2008, the total dollar amount was $1,644,555,000 and in 2016 the dollar amount was $982,000,000. "Grant Programs Directorate Overview," Department of Homeland Security, last revised November 7, 2008, https://www.dhs.gov/xlibrary/assets/grant-program-overview-fy2009.pdf; "DHS Announces Funding Opportunity for Fiscal Year (FY) 2016 Preparedness Grants," Department of Homeland Security, February 16, 2016, https://www.dhs.gov/news/2016/02/16/dhs-announces-funding-opportunity-fiscal-year-fy-2016-preparedness-grants.

[4] "U.S. Senate Report: Administration Budget Cuts Counterterrorism Programs by $583 Million," U.S. Senate Committee on Homeland Security & Governmental Affairs, July 13, 2017, www.hsgac.senate.gov/media/minority-media/us-senate-report-administration-budget-cuts-counterterrorism-programs-by-583-million.

[5] Angel Rabasa et al., *The Lessons of Mumbai* (Santa Monica, CA: RAND, 2009); Homeland Security Advisory Council and Paris Public Safety Delegation, "The Attacks on Paris: Lessons Learned" (white paper, Homeland Security Advisory Council, 2016, https://static1.squarespace.com/static/5782ad8f9de4bb114784a8fe/t/5783fec9d482e95d4e0b79bf/1468268235955/HSAC-Paris_LessonsLearned_WhitePaper.pdf.

and three recommendations to enhance both JCTAWS and IEMC as well as to improve the domestic conversation through leadership and scholarly research.

The research discovered that, even without a national CCA strategy, the JCTAWS and IEMC programs increase preparedness and resilience. However, the analyzed results of state and local participation indicated that major cities and jurisdictions do not have a unified plan to respond to a CCA incident and that there is no clear picture of how many gaps have been addressed by participants. Further, first responders are adapting to a variety of environmental injects, including the increase of active shooter events, which may decrease attention to the CCA issue because it is a low-frequency, high-threat consequence. Three recommended imperatives will help address the findings, including the establishment of a national high-threat institution to aggregate and support state and local programs with research, analysis, and best practices for emerging threats. Further, JCTAWS and IEMC can be enhanced by creating opportunities for jurisdictions that may not have the funds or resources to participate in these programs, including a stand-alone assessment program of emergency response plans and policies. Lastly, recognizing the power and influence of national leadership collaboration, this thesis implores a collaborative regional, state, and national discussion of implications and a way forward to address this threat.

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I. INTRODUCTION

> Prepare for the unknown by studying how others in the past have coped with the unforeseeable and the unpredictable.
>
> —George S. Patton

A. PROBLEM STATEMENT

State and local first responders in the United States lack a common strategic approach to prepare for complex coordinated attacks (CCAs).[1] The National Counterterrorism Center, Federal Emergency Management Agency, and Federal Bureau of Investigation (FBI) define a complex coordinated attack (CCA) as a "coordinated assault on one or more locations in close succession, initiated after little or no warning, employing one or more of the following: firearms, explosives, and arson."[2] However, domestically, scholarly research, analysis, and shared best practices—essential pillars for first responders to better prepare and increase resiliency—are mostly absent from domestic strategic CCA preparedness plans and guidance. This was acknowledged in a 2003 federal report by the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction (also known as the Gilmore Commission), which promised that "a lack of clear strategic guidance from the Federal level about the definition and objectives of preparedness and how States and localities will be evaluated in meeting those objectives."[3] And in 2015, the *National Preparedness Goal* (NPG) highlights five core mission areas that, once achieved, should result in

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[1] For the purposes of this research, first responders are members of any discipline that has an emergency response mission, such as fire and rescue, law enforcement, and emergency medical services.

[2] National Counterterrorism Center (NCTC), Department of Homeland Security (DHS), and Federal Bureau of Investigation (FBI), "NCTC/DHS/FBI 2015 JCTAWS Comprehensive Summary Report—2011–2015" (report, Federal Emergency Management Agency, 2016).

[3] Gilmore Commission, *The Fifth Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction—V. Forging Americas New Normalcy: Securing Our Homeland, Preserving Our Liberty* (Santa Monica, CA: RAND, 2003), 5, http://www.rand.org/nsrd/terrpanel.html.

preparedness for any hazard in the United States.[4] But the lack of strategic CCA guidance impedes proper or full achievement of those goals by state and local first responders.

Inconsistent terminology complicates the discussion of CCAs.[5] The media, public safety, and the armed forces have used the term CCA, as well as "complex attack" or "coordinated attack," to describe a variety of attacks. However, in many examples, a simple attack with conventional weapons, such as an active-shooter event, is categorized as complex and coordinated. The Federal Emergency Management Agency (FEMA), for example, defines a CCA as an act of terrorism that may:

> Involve synchronized and independent team(s) at multiple locations sequentially or in close succession, initiated with little or no warning, and employing one or more weapon systems: firearms, explosives, fire as a weapon, and other non-traditional attack methodologies which are intended to result in scores of casualties.[6]

Regardless of the tactics involved—whether fire, shooting, or a vehicle attack—a CCA is particularly destructive if the attack cycle occurs at multiple locations and in close succession. The response to a CCA would likely outpace the availability of first-responder resources and capabilities. The need to manage multiple hazards, threats, and action plans would be challenging.

Three main points link implications for state and local governments. First, the United States has not experienced a CCA like those in Mumbai or Paris; this renders the threat low probability, if high consequence, and thus low priority. This may explain why it has been difficult to establish a national CCA policy and get first responders and public safety leaders to fully embrace, fund, and accept CCA preparedness. Second, and perhaps as a direct consequence of the first point, preparedness funding in the United States is declining across the board; only high-priority and high-probability events receive

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[4] Department of Homeland Security (DHS), *National Preparedness Goal*, 2nd ed. (Washington, DC: DHS, 2015).

[5] Prior to 2001, cyber terrorism experts used the term "complex-coordinated." No information was located to clarify when the term "complex coordinated attack" was first used and by whom.

[6] "Fiscal Year (FY) 2016 Program to Prepare Communities for Complex Coordinated Terrorist Attacks (CCTA Program) Frequently Asked Questions (FAQs)," FEMA, accessed November 18, 2017, https://www.fema.gov/media-library-data/1483977330938-39947ba9f33a3fda477ae3b257a6b371/FY_2016_CCTA_Program_FAQs_20170106.pdf.

necessary funding and attention. For example, since 2008, federal funds to support state and local response efforts have decreased by $662 million.[7] Further, the White House's 2018 fiscal year budget calls for a $582.8 million reduction. Should this reduction occur, such programs as the newly formed Complex Coordinated Terrorist Attacks program and the Countering Violent Extremist Grant would be eliminated.[8] Finally, if a CCA were to occur today in a major city or town without a unified plan, first responders would respond to, manage, and mitigate the incident. They would attempt to bring order to chaos in any fashion, just as the first responders did on 9/11. However, if guidance related to preparedness and baseline capabilities is weak or non-existent among state and local public safety disciplines, the response to a multi-site terrorist attack could be disastrous. In the Mumbai and Paris CCAs, local agencies faced significant challenges with incident command, strategic communication, and information management; limitations in both training and equipment; and inadequate response protocols.[9] During the Mumbai CCA, fire and emergency services assets were uncoordinated with local law enforcement, which resulted in a delay of life-saving equipment.[10] The Paris incident uncovered problems with law enforcement due in part to a disconnected centralized command between local and federal police assets.[11] In sum, these challenges added to the confusion and delayed resources during an unfolding multi-site attack scenario.

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[7] The analysis was conducted for fiscal years 2008–2016 through an open source at www.dhs.gov. This data was derived from allotted grant dollars within the State Homeland Security Program and the Urban Area Security Initiative. In 2008, the total dollar amount was $1,644,555,000 and in 2016 the dollar amount was $982,000,000. "Grant Programs Directorate Overview," Department of Homeland Security, last revised November 7, 2008, https://www.dhs.gov/xlibrary/assets/grant-program-overview-fy2009.pdf; "DHS Announces Funding Opportunity for Fiscal Year (FY) 2016 Preparedness Grants," Department of Homeland Security, February 16, 2016, https://www.dhs.gov/news/2016/02/16/dhs-announces-funding-opportunity-fiscal-year-fy-2016-preparedness-grants.

[8] "U.S. Senate Report: Administration Budget Cuts Counterterrorism Programs by $583 Million," U.S. Senate Committee on Homeland Security & Governmental Affairs, July 13, 2017, www.hsgac.senate.gov/media/minority-media/us-senate-report-administration-budget-cuts-counterterrorism-programs-by-583-million.

[9] Angel Rabasa et al., *The Lessons of Mumbai* (Santa Monica, CA: RAND, 2009).

[10] Rabasa et al.

[11] Adam Nossiter, "Response to Paris Attacks Points to Weaknesses in French Police Structure," *New York Times*, December 31, 2015, sec. Europe, https://www.nytimes.com/2016/01/01/world/europe/response-to-paris-attacks-points-to-weaknesses-in-french-police-structure.html.

My assumption is that state and local first responders are in fact preparing to respond to a CCA, but measuring preparedness is difficult because no national plan or standardized benchmarks exist. As a result, emergency response disciplines such as fire and rescue, law enforcement, and emergency medical services may either improvise a strategy to manage an unfamiliar or emerging threat—which has been demonstrated to have downright damaging effects—or fail to implement current plans due to the complex and chaotic atmosphere.[12] This thesis employs research, inquiry, and analysis to gain better insight into domestic CCA policies and programs that are specific to the first-responder community.

B. RESEARCH QUESTIONS

This thesis sought to answer the following questions:

- What barriers exist to first responders reaching CCA preparedness?
- How much do JCTAWS and IEMC increase preparedness?
- Are first responders implementing recommendations after JCTAWS or IEMC?
- What improvements could be made to the CCA strategy?

C. LITERATURE REVIEW

There is very little literature or scholarly research that explains the meaning or minutiae of complex coordinated attacks. Law enforcement and armed forces professionals have written most of the literature on CCAs, albeit in dissimilar ways. Nevertheless, the use of the term CCA in a variety of sources helps to clarify the argument and exemplify the divergence in language.

Classically, taxonomy is used in the sciences to describe the characteristics of living things and their relationships by characterizing or organizing them according to

[12] "Paris Insights," George Washington University Center for Cyber & Homeland Security, November 2015, https://cchs.gwu.edu/sites/cchs.gwu.edu/files/image/CCHS_Paris%20Insights.pdf.

their natural relationships.[13] A taxonomic approach to CCA, with minor modifications, can help explain similarities and differences in attacks, which is helpful for both policy development and preparedness efforts.

The *New York Times* labeled the 1983 Beirut attacks against the Marine barracks and, shortly after, the French Paratrooper barracks, as *simultaneous attacks.*[14] Both attack teams deployed vehicle-borne improvised explosive devices (IEDs) against two separate targets. This is the only known reference to the term "simultaneous attacks." It is possible that the term *simultaneous* changed to *coordinated* over time.

In early 2001, the Center for Strategic Studies produced a report that identified some of the security gaps that the United States has or will face. That report summarized the issue this way, nearly sixteen years ago: "US plans and programs must consider a possible future in which the use of weapons of mass destruction becomes a common aspect of asymmetric warfare, and in which complex and sophisticated attacks are conducted against both the U.S. and its allies."[15] The idea of "complex and sophisticated attacks" was prescient, and certainly shows that the CCA narrative was being discussed before 9/11.

Angel Rabasa et al., RAND Corporation analysts, addressed the complexity of terrorist attacks in a 2009 article about the 2008 Mumbai attacks. Rabasa et al. do not mention the attacks' coordination, only their complexity.[16] This is important because the Mumbai attacks are widely considered both complex and coordinated: complex because they involved multiple teams, multiple weapons (IEDs, assault weapons, fire), and

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[13] *Merriam-Webster*, s.v. "Taxonomy," accessed November 27, 2016, http://www.merriam-webster.com/dictionary/taxonomy.

[14] "On this Day: October 23," *New York Times*, accessed November 6, 2016, www.nytimes.com/learning/general/onthisday/991023onthisday_big.html#article.

[15] Anthony Cordesman, "Homeland Defense: Coping with the Threat of Indirect, Covert, Terrorist, and Extremist Attacks with Weapons of Mass Destruction," in *Defending America: Redefining the Conceptual Borders of Homeland Defense* (Washington, DC: Center for Strategic and International Studies, 2001), 34.

[16] Rabasa et al., *Lessons of Mumbai*.

multiple locations in the city within a short period; coordinated because a "handler" directed and encouraged the attackers through a satellite phone to fulfill the attack plan.[17]

Other attacks are compared and contrasted to the devastation and success of the Mumbai attacks, and are commonly referred to as a "Mumbai-style attacks."[18] John P. Blair et al. argue that this type of attack poses a concern to local police because of the use of small arms and multiple active-shooter tactics.[19] The authors go on to suggest that the use of IEDs and small arms is nothing new, but they do not connect the importance of both the use of IEDs and small arms in a CCA.[20]

One of the few sources to discuss a CCA explicitly is a 2016 Europol report on the Paris attacks, which it calls "complex, and well-coordinated."[21] The report notes similarities between Mumbai and Paris, including the use of AK-47 rifles, multiple public targets, and multiple attackers, but goes further than other reports on Paris by evaluating "impact," or casualties.[22] This is significant because no other report describes or evaluates the effectiveness of the attack in terms of the injured and dead. In effect, adding this characterization provides more information on important factors such as the preparedness levels of first responders, the success of the attackers, or perhaps even the location—such as a movie theater with limited ingress and egress.

Much of the literature on specific CCAs, like Paris, neglects to identify the characteristics of such an attack. An example is an article by Paul Belkin, a European affairs analyst, in which he compares Paris and Mumbai but without providing any further explanation about how or why the attacks were coordinated.[23] Coordination could indicate that there was a handler, or that someone else was directing the attack, as seen

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[17] Rabasa et al.

[18] John P. Blair et al., *Active Shooter Events and Response* (Boca Raton, FL: CRC Press, 2013).

[19] Blair et al.

[20] Blair et al.

[21] "Changes in Modus Operandi of Islamic State Terrorist Attacks," Europol, January 18, 2016, https://www.europol.europa.eu/publications-documents/changes-in-modus-operandi-of-islamic-state-terrorist-attacks.

[22] Europol.

[23] Paul Belkin, *France: Efforts to Counter Islamist Terrorism and the Islamic State* (Washington, DC: Congressional Research Service, 2015).

during the 2008 Mumbai attacks. Without proof of coordination, as in the Mumbai attack, the author must assume that labeling the Paris attack as a coordinated terrorist attack results from a flawed narrative, or that it just seems like the best label.

In another incident, the New York Police Department (NYPD) prepared an official briefing after the April 5, 2010 attack on the U.S. Consulate in Peshawar, Pakistan. In the briefing, the NYPD states that this attack was a "complex attack," but there is no discussion of how or why it was complex.[24] The attackers arrived in two separate vehicles, which could suggest the attack was planned. But the use of the term is not helpful in understanding the issue.

Another example can be found in the 2016 American University attack in Kabul, Afghanistan. News sources describe the incident as a complex attack. Two men with guns detonated at least one vehicle-borne IED, but the news article does not mention tactics or explain why the attack was complex.[25]

In 2011, Brigadier General Carsten Jacobson, a U.S. Army International Security Assistance Force spokesperson, explained to the media the following differences between a complex attack and a coordinated attack:

> **Complex Attack is an attack conducted by multiple hostile elements, which employ at least two distinct classes of weapon systems (i.e., indirect fire and direct fire, IED and surface to air fire) against one or more targets.** Complex attacks differ from coordinated attacks due to the lack of any indication of a long-term planning process or prior preparation. Coordinated Attack is an attack that exhibits deliberate planning conducted by multiple hostile elements, against one or more targets from multiple locations. A coordinated attack may involve any number of weapon systems. The key difference between complex and coordinated is that a coordinated attack requires the indication of insurgent long-term planning.[26]

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[24] NYPD Counterterrorism Bureau, "NYPD Shield: U.S. Consulate Attack Peshawar, Pakistan" (intelligence brief, New York City Police Department, April 5, 2010).

[25] Mirwais Harooni and Hamid Shalizi, "Gunmen Attack American University of Afghanistan in Kabul," *Huffington Post*, August 24, 2016, sec. WorldPost, http://www.huffingtonpost.com/entry/american-university-kabul-attack-afghanistan_us_57bdb5f8e4b03d51368bd377.

[26] Tim Foxley, "'Complex' Attack on American University of Afghanistan," *Afghanhindsight* (blog), August 25, 2016, https://afghanhindsight.wordpress.com/2016/08/25/complex-attack-on-american-university-of-afghanistan/.

General Jacobson makes several important points here. First, he differentiates between the terms "complex" and "coordinated," but also provides a clear purpose and meaning for each type of attack. Second, his perspective is based on combat experience, and therefore most likely derived from actual attack events. However, the coordination aspect is still not clear. A view from one lens suggests a coordinated attack could mean exactly as the general stated, that long-term planning is conducted before an attack. Another lens, however, suggests that coordination involves someone who is orchestrating the attack from a remote location. The latter occurred in the Mumbai attack, while the former occurred in other attacks such as in Paris and Beslan, Russia.

In 2011, the NYPD produced another report stemming from the attack on the U.S. Embassy in Kabul, Afghanistan. This attack involved multiple locations and assault weapons, rocket-propelled grenades, and suicide vests. Unlike its 2010 report, which used the term "complex attack," this attack was labeled by the NYPD as a "coordinated attack."[27] Both attacks—the Peshawar and Kabul attacks—exhibited the same tactics, but the first attack occurred at a single location and the second attack occurred at multiple locations. The only other difference, which would not fully explain the differences between labeling one attack complex and the other coordinated, is the use of the suicide vest in the 2011 attack.

The *Long War Journal* used three labels to explain an attack that targeted police and local government officials in 2013. In the article, the author used "complex attack," "complex assault," and "complex conventional attack" interchangeably.[28] The article referenced other attacks by a terrorist group using similar tactics, yet the author did not label those incidents as complex or conventional. The article did not clarify why this attack was complex, nor why the use of explosive-laden people or vehicles is considered a conventional act.

The National Counterterrorism Center's (NCTC) Joint Counterterrorism Awareness Workshop Series (JCTAWS) is a nationally recognized program that aims to

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[27] NYPD Counterterrorism Bureau, "NYPD Shield

[28] "ISIS Uses 8 Suicide Bombers in Complex Attack in Western Iraq," *The Long War Journal* (blog), accessed November 11, 2016, http://www.longwarjournal.org/archives/2013/10/isis_use_8_suicide_b.php.

addresses threats related to state and local preparedness. In the 2011 NCTC-JCTAWS Phase 1 report, common terms used include "complex attack," "organized, coordinated, and multi-site attack," and "complex multi-site terrorist attack."[29] The report does not explain what these terms mean, despite a reference to the 2008 Mumbai attacks. However, a 2015 NCTC document, which is similar to the 2011 document, used different language, such as "complex terrorist attack" and "complex attack."[30] The change in language in 2015 indicates evolution of the description, and perhaps the progressing mechanism of CCA.

In 2013, Tracy Frazzano and Matthew Snyder, two law enforcement professionals, developed a new taxonomy to describe a CCA. The article, published in the *Homeland Security Affairs* journal, defines Hybrid Targeted Violence (HTV) as an "intentional use of force to cause physical injury or death to a specifically identified population using multifaceted conventional weapons and tactics."[31] This definition could be used to describe violent protestors or anyone who shoots another person. The authors state that HTV is a better explanation of the Department of Homeland Security's definition of "active shooter."[32] The authors also suggest that the HTV concept "clearly defines complex attacks" through the following formula:

(Multiple Weapons) + (Targeted Population) + (Planned Violent Action) = Hybrid Targeted Violence[33]

Frazzano and Snyder make a point in the article to apply HTV not only to terrorist incidents, but also to any incident that fits the formula, such as the Sandy Hook Elementary and Columbine High School shootings. The reference to these events diverges from other CCA characterizations because Frazzano and Snyder focus primarily on the active shooter situation through a law enforcement lens.

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[29] NCTC, DHS, and FBI, "NCTC/DHS/FBI Joint Counterterrorism Workshop Series Phase 1 Report (Jan-Dec 2011)" (report, Federal Emergency Management Agency, 2012).

[30] NCTC, DHS, and FBI, "2015 JCTAWS Comprehensive Summary Report."

[31] Tracy Frazzano and Matthew Snyder, "Hybrid Targeted Violence: Challenging Conventional 'Active Shooter' Response Strategies," *Homeland Security Affairs* (blog), February 13, 2014, https://www.hsaj.org/articles/253.

[32] Frazzano and Snyder.

[33] Frazzano and Snyder.

Further, the framework is very similar to the 2011 address by Brigadier General Jacobson in his reference to the differences between complex and coordinated attacks. For example, in the HTV definition, multiple weapons and a targeted population seem to align with Jacobson's complex attack definition. Furthermore, the planned violent action reference in the HTV model matches Jacobson's coordinated attack reference in 2011. However, the HTV model contradicts General Jacobson's distinction between complex attacks and coordinated attacks, which appears to be his original intent.

The term *swarm attack* has been used to describe a coordinated attack. According to Cerwyn Moore, in a 2012 West Point Center for Combating Terrorism article, swarm attacks are "high-risk, coordinated assaults sometimes directed against multiple targets or building complexes, using mobile groups to circumvent security measures, allowing attackers to inflict casualties, garner news coverage and, in recent years, to inflict considerable damage prior to the neutralization of the assailants."[34] It is important to note that Moore's definition does not mention weapons, but is specific to the attack target and the intended use of such an attack. Further analysis of the literature explains the important aspects of "swarm attacks." One, these incidents start with shooting. The use of firearms enhances the mobility of the attacking team. Two, swarm attacks include multiple targets to slow or confuse law enforcement. Three, these attacks require a level of leadership and military capacity. Few swarm attacks are spontaneous. Four, many of the tactics used in an attack are not new. Attackers will recognize barriers (before or during the attack) or homeland security systems and adapt.

On July 7, 2005, London, England, was hit with an attack that involved four explosions over a one-hour period. All of the detonations targeted public transportation, and the first three were "near simultaneous."[35] In the official investigative report by the UK Honourable House of Commons, the event was labeled a "terrorist attack" and an

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[34] Cerwyn Moore, "The Threat from Swarm Attacks: Case Studies from the North Caucasus," Combating Terrorism Center at West Point, May 22, 2012, https://www.ctc.usma.edu/posts/the-threat-from-swarm-attacks-case-studies-from-the-north-caucasus.

[35] Great Britain Parliament House of Commons, *Report of the Official Account of the Bombings in London on 7th July 2005*, vol. HC 1087 (London: The Stationery Office, 2006), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228837/1087.pdf.

"act of indiscriminate terror," with no mention of complexity or coordination.[36] The University of Maryland's National Consortium for the Study of Terrorism and Response to Terrorism (START) produced a report on the fifth anniversary of the London attacks that, terminologically, diverges from the official investigative report. In its report, START labeled the London attack as a "coordinated attack" rather than a terrorist attack.[37] The variance between the official report and the START report emphasizes the variety in terminology.

In summary, past literature has described, explained, and arranged the terminology for CCAs differently across many disciplines. One possible reason for this variance is that, since a CCA has not occurred in the United States, the terminology and composition of the threat is not fully understood or developed. Or, perhaps, the tactics of a CCA have evolved to a point that the issue is truly amorphous. Another explanation could be similar to the definition of terrorism. Professor of Law Sudha Setty sums up the problem by indicating that terrorism "law and policy depends on definition" and that "if an individual state is to address the problem of terrorist activity, it must first define terrorism's parameters."[38] Perhaps CCA is no different.

D. RESEARCH DESIGN

The goal of this research was to discover factors that help or impede first responders preparing for a CCA. The two primary methods of inquiry were qualitative content and data analysis, along with thematic analysis to review JCTAWS and IEMC summary reports and survey responses from JCTAWS/IEMC participants. The two tools of measurement collected twenty-four JCTAWS and ten IEMC summary reports and anonymous responses from an approved online survey. The investigation looked for themes, areas of divergence, gaps, and results, which were compared to a qualitative

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[36] Great Britain Parliament House of Commons.

[37] National Consortium for the Study of Terrorism and Responses to Terrorism, "Background Report: On the Fifth Anniversary of the 7/7 London Transit Attack" (report, University of Maryland, 2010), http://www.start.umd.edu/sites/default/files/files/announcements/July07_LondonMetroBombing_2010.pdf.

[38] Sudha Setty, "What's in a Name? How Nations Define Terrorism Ten Years after 9/11," *University of Pennsylvania Journal of International Law* 33, no. 1 (October 2011): 7, http://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=1052&context=jil.

survey. Raw data from both sets (the JCTAWS and IEMC summary reports and survey) were analyzed and sorted into areas that were problematic. Questions for the online survey were developed from both hypothetical and known problem areas.

There were three stages in the thematic analytical process.[39] The first step was to develop themes inductively from the information found in the twenty-four JCTAWS and ten IEMC summary reports and the online survey. The second step was to code and record both data sets according to the themes and corresponding jurisdiction. The third step was to infer patterns and develop a set of recommendations and findings.

Boyatzis explains that the thematic analysis process involves encoding qualitative information in order to "see" or sense patterns or occurrences.[40] This process helps researchers synthesize varying types of information to increase "accuracy in understanding and interpreting observations" about a topic.[41] This process demonstrates how data from JCTAWS and IEMC summary reports and data from the online survey results in the amalgamation of themes and patterns.

E. CHAPTER OVERVIEW

The following chapters investigate and analyze the nation's process of preparing for a CCA. Chapter II evaluates two federal training programs, JCTAWS and IEMC, holistically and analyzes common themes, gaps, and challenges that first responder's experience. Chapter III analyzes and synthesizes the survey results completed by the sample of JCTAWS and IEMC participants. Chapter IV outlines the major themes discovered during the research, including implementation and emergent challenges.

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[39] Richard E. Boyatzis, *Transforming Qualitative Information: Thematic Analysis and Code Development* (Thousand Oaks, CA: SAGE, 1998).

[40] Boyatzis, 4.

[41] Boyatzis, 5.

II. JCTAWS AND IEMC: BACKGROUND AND FINDINGS

> Management models based on planning and predicting instead of resilient adaptation to changing circumstances are no longer suited to today's challenges.
>
> —General McChrystal

The ambiguity and challenges outlined in the previous chapter underscore the need to conduct research both on the current status of CCA preparedness and the challenges that first responders are experiencing. The goals of this chapter are to emphasize that there is no playbook for CCA despite a plethora of federal guidance for other hazards, and to analyze and synthesize findings and recommendations from JCTAWS and IEMC reports. Although a small contribution to the issue, this chapter reflects on two federal programs specifically designed to challenge municipalities in a CCA.

A. INTRODUCTION

Both JCTAWS and IEMC are consequences of global terrorist attacks and lessons learned.[42] These courses are designed to stress the use of local emergency plans through a simulation of terrorist tactics and to enhance preparedness activities by addressing gaps in policy and local emergency procedures.

Both courses are structured and organized around federal guidance, including the 2015 National Preparedness Goal (NPG), which provides a vision for utilizing an integrated, whole-of-nation approach to build and sustain capabilities (prevention, protection, mitigation, response, and recovery) in response to a variety of threats.[43] The NPG does not mention any form of CCA, but it does offer, to a degree, a strategy for

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[42] *FEMA: Assessing Progress, Performance, and Preparedness: Testimony before the U.S. Senate Committee on Homeland Security and Governmental Affairs Subcommittee on Federal Spending Oversight and Emergency Management* (2016) (statement of the Honorable Timothy Manning, FEMA deputy administrator).

[43] DHS, *National Preparedness Goal*, 1.

preparedness. At the tactical level, the National Preparedness System (NPS) and the National Protection Framework consider the whole community as the driving force for safety and resilience, and for reaching the goals of the NPG. Mission area components of the NPS include: identifying and assessing risk, estimating capability requirements, buildings and sustaining capabilities, planning to deliver capabilities, validating capabilities, and reviewing and updating.[44] The NPS does not mention CCA either, but does highlight complex incidents that involve multiple jurisdictions.[45] The National Protection Framework focus includes intelligence and information sharing, interdiction and disruption, infrastructure systems, and risk management capabilities.[46] In 2016, the U.S. Department of Homeland Security released the National Preparedness Report (NPR). This report is a requirement of Presidential Policy Directive 8; its purpose is to provide federal, state, and local governments with practical insights into preparedness activities, and inform the community about program support and priorities, resource allotment, and community activity.[47] Although the NPR does not address the term CCA, it does address programs and initiatives that support CCA preparedness:

1. JCTAWS addresses prevention of and response to CCAs.[48]

2. Federal and private sectors are engaging to enhance coordination to protect against a CCA; however, there is no mention of progress at the state and local first responder level.[49]

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[44] "National Preparedness System," FEMA, accessed July 14, 2017, https://www.fema.gov/national-preparedness-system.

[45] FEMA.

[46] DHS, *National Protection Framework*, 2nd ed. (Washington, DC: DHS, 2016), 12, www.fema.gov/media-library-data/1466017309052-85051ed62fe595d4ad026edf4d85541e/National_Protection_Framework2nd.pdf.

[47] "2016 National Preparedness Report," FEMA, accessed April 7, 2017, www.fema.gov/media-library/assets/documents/116951.

[48] DHS, *National Preparedness Report* (Washington, DC: DHS, 2016), 27, 30.

[49] DHS, ii.

B. CCA PREPAREDNESS PROGRAMS

Global attacks and threats, particularly those that have occurred outside the United States, have shaped domestic preparedness activities. JCTAWS, for example, was born three years after the November 2008 Mumbai attack.[50] The Mumbai attack is considered one of the more notable and unique CCAs because of the central command element, selection of soft targets, selection of weapons and tactics, pre-planning associated with the attack, and the number of dead and injured.[51] In 2016, a second course, IEMC, was designed and made available to a wide variety of state and local agencies. Unlike JCTAWS, there is no data to suggest that IEMC was developed in response to a particular attack; however, both courses attempt to strengthen the state and local polices based on the challenges discovered during the Mumbai attack. Specifically, both courses address pre-attack challenges such as intelligence and information sharing, and collaboration and training. These courses also review core capabilities during the attack, such as medical surge, first responder resilience, operational coordination, and public warning.

This thesis analyzed all JCTAWS and IEMC reports from calendar years 2011 through 2016.[52] In total, twenty-four JCTAWS and ten IEMC reports were obtained through an official federal process, which includes a formal request, completion of a non-disclosure report, and approval from FEMA, the authorizing agency. Names and geographical identifiers of municipalities are redacted due to the classification of these documents and the sensitivity of the recommendations and findings, as well as the potential to expose vulnerabilities and weaknesses.[53]

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[50] NCTC, DHS, and FBI, "Joint Counterterrorism Awareness Workshop Series: Comprehensive Summary Report (2011–2015)" (report, NCTC, 2016).

[51] Rabasa et al., *Lessons of Mumbai*.

[52] These documents were collected in the later part of 2016, at which point only twenty-four JCTAWS and ten IEMC reports existed.

[53] All JCTAWS and IEMC reports are either unclassified, for official use only (U//FOUO) or unclassified, law enforcement sensitive (U//LES). These are not made available to the general public. The information related to these sources contained within this thesis, however, has been approved for public release.

C. JCTAWS AND IEMC OVERVIEW AND COMPARISON

JCTAWS and IEMC are two federally available training programs that holistically prepare state and local first responders and government leaders, and private sector partners, for a CCA.[54] Since the inception of JCTAWS, over thirty trainings have been completed across the United States.[55] Each program is managed by federal employees from a variety of agencies, such as the Department of Homeland Security, FEMA, National Counterterrorism Center, FBI, and also state and local agencies. While the programs have similarities, they also have differences.

D. JCTAWS

The National Counterterrorism Center (NCTC), Department of Homeland Security, and FBI sponsor and support JCTAWS. These agencies identify key cities within the United States to participate in the exercise. During each workshop, federal partners assemble a team of experts—the interagency planning group—that has unique areas of expertise to develop a phased attack based on current intelligence and the regional assessment of capabilities and response policies. During the exercise delivery, the interagency planning group engages the stakeholders, develops a delivery package that suits the needs of the host jurisdiction, and provides a final report to the host city.[56]

JCTAWS involves and assesses the whole community, including law enforcement, fire and rescue, the public health and medical system, and emergency management to test and exercise the effectiveness of current local plans and policies against a simulated Mumbai-style attack in the host jurisdiction.[57] Prior to each JCTAWS event, the host agency is provided with a self-assessment matrix (in the form of a survey) to complete with the goal of identifying potential gaps in or barriers that the JCTAWS team can address during the scenario. As part of the questionnaire, participants are asked

[54] Other federal and private programs and courses do exist; however, they do not solely concentrate on CCAs. Examples include the Naval Postgraduate School Center for Homeland Defense and Security Mobile Education Team, DHS Office of Bombing Prevention, and DHS Active Shooter training.

[55] NCTC, DHS, and FBI, "JCTAWS Summary Report."

[56] NCTC, DHS, and FBI.

[57] FEMA, "2016 Complex Coordinated Attack Post-workshop Evaluation: JCTAWS & IEMC Training (2011–2016)" (report, FEMA, 2017).

about a variety of plans, capabilities, and policies. This two-day program requires months of planning and coordination between the JCTAWS planning team and the host jurisdiction. A detailed, and in some ways unique, table-top exercise is developed for the host jurisdiction based on threat information and an assessment of the host agency questionnaire.

A typical scenario mirrors a CCA, by definition, containing multi-team, multi-site, and multi-weapons systems or attack modes. Participants are exposed to a variety of "injects," such as suspicious activity around a critical infrastructure, a 911 call for a person with a gun at a mall, or a large protest. JCTAWS staff inject larger scenarios, such as the report of a vehicle-borne IED or a person shooting into a crowd. Participants typically experience around five significant injects to test local policies and emergency operations plans.

At the conclusion of the two-day exercise, the JCTAWS staff provides the local agencies with a summary report of the training, the scenario, and the gaps identified by the participants.[58] The summary report contains numerous sections that validate the importance of the program, and it serves as a reference for participants. In general, the following sections are included in the summary report:

- Section 1—executive summary
- Section 2—introduction
- Section 3—workshop overview
- Section 4—workshop design
- Section 5—capability gap matrix
- Section 6—feedback summary
- Section 7—conclusion

[58] NCTC, DHS, and FBI, "JCTAWS Summary Report."

A variety of appendices highlight breakout group results, participant feedback, and a list of acronyms. The capability gap matrix (see Appendix Table 1) is a comprehensive review of host agency shortcomings identified prior to the exercise (by self-assessment) or observed by the JCTAWS staff during the training. The matrix also provides a cross-examination of the core capabilities, mitigation strategies, capability elements, and federal resources that could be used by the local agency to mitigate the gap. This research did not measure or inquire as to the benefit of these resources or if participants utilize them.

Analysis of twenty-four JCTAWS summary reports indicates that each delivery has the same objectives, and includes[59]

- Review existing preparedness, response, and interdiction plans, policies, and procedures related to a complex coordinated attack.
- Identify gaps in plans, operational capabilities, response resources, and authorities.
- Identify federal, state, and local resources, including federal grants, training, exercises, and technical assistance available to address potential gaps in capabilities.
- Improve whole community situational awareness, recognize best practices, and encourage information sharing among all stakeholders in the event of a complex terrorist attack.
- Examine the healthcare system and clinical challenges unique to a CCA that employs small arms and explosives.
- Examine the roles of the community and bystanders in a complex terrorist attack.

[59] The twenty-four reports analyzed are federal government property and classified as unclassified/for official use only (U//FOUO). The information related to these sources contained within this thesis, however, has been approved for public release.

- Discuss frameworks and existing protocols for immediate medical management of the wounded in or near an attack site.
- Identify and share best practices and lessons learned from the case studies in medical preparedness and response.

E. IEMC

The IEMC course is sponsored by FEMA; while its framework is similar to JCTAWS, the audience is broader and the delivery is more diverse. Unlike JCTAWS, IEMC is a four-day program that occurs either at the Emergency Management Institute National Emergency Training Center in Emmitsburg, Maryland, or remotely within the host municipality. The target audience for IEMC is communities with a population of at least 100,000, and the course relies on the participation of state and local government officials, first responders, emergency managers, public health workers, and other residents who have a role in responding to a CCA.[60] The background work prior to the IEMC diverges from JCTAWS and includes a pre-site visit by IEMC staff prior to the course to review policies, plans, and development of the scenario. In addition, IEMC staff meets with each first responder discipline in order to identify gaps and problematic areas within the plans and policies.

During the four days of IEMC, participants are exposed to a variety of briefings, case studies, and focused group discussions. As part of this course model, the program encourages intra-discipline dialogue, but also enables cross-discipline networking to enhance the discussion and problem-solving potential. The IEMC course does include a CCA scenario and IEMC staff foster a non-attribution environment to support more communication between stakeholders.

Similar to JCTAWS, IEMC host agencies are provided with a summary report, which includes a summary of findings, capability gap matrix, and a variety of appendices.

[60] FEMA, "Course: E/L0912—Preparing Communities for a Complex Coordinated Attack IEMC: Community Specific," DHS, October 14, 2015, https://training.fema.gov/emigrams/2015/1201%20-%20training%20opportunity%20-%20e-l%200912%20cca%20-%20fy%202016.pdf?d=10/14/2015.

Analysis of eleven IEMC reports indicates that each delivery has the same goals and objectives:

IEMC Goals

- Identify interdependencies and gaps in decisions, actions, and resources needed to respond to a CCA.
- Increase situational awareness to inform the community of the challenges faced by healthcare systems during a CCA.
- Increase understanding of how to involve the whole community in response to a CCA.
- Develop a strategy for creating a regional plan for response to a CCA.

IEMC Objectives

- Review preparedness and response policies and plans.
- Discover operational and resource gaps.
- Assess the healthcare and emergency medical system challenges.
- Examine incident command and coordination capabilities and challenges.
- Recognize and share best practices from previous attack responses.

F. ANALYSIS OF JCTAWS AND IEMC SUMMARY REPORTS

Throughout the qualitative analysis process, all data was examined within the thirty-four summary reports. The main concentration of data was extracted from the capability gap matrix section, which was either a direct observation by JCTAWS or IEMC staff during the exercise or during the self-assessment review process. In total, 782 gaps were identified from the thirty-four JCTAWS and IEMC summary reports. On average, each agency reported twenty-four gaps relating to a variety of core areas, and the following represent the areas with the most highly identified gaps:

- emergency operations center
- integrated operations
- incident command
- communication (internal and external)
- intelligence/information sharing
- resource management.

The capability gap matrix links each gap from the JCTAWS or IEMC report to a federal core capability described within the NPG. The core capabilities are general competencies that serve as a guide to state and local municipalities. The latest version, from 2015, states that the nation's "security and resiliency posture" is built upon the foundation and sustainment of core capabilities.[61] Each core capability is interdependent and can evolve to address emerging homeland security challenges.[62] The core capabilities (found in Appendix Table 2) are subordinate to the five mission areas: prevention, protection, mitigation, response, and recovery.[63]

Specific to JCTAWS, the consistent core capabilities assessed include

- **Primary**: intelligence and information sharing, interdiction and disruption, operational communications, operational coordination, public health and medical services, public information and warning, situational assessment; and
- **Secondary**: access control and identify verification, fatality management services, forensics and attribution, infrastructure systems, mass care services, and on-scene security and protection.

[61] DHS, *National Preparedness Goal*, 1.

[62] DHS.

[63] DHS, *National Preparedness Report*.

IEMC, however, assesses

- **Primary**: intelligence and information sharing, medical preparedness and response, operational communications, operational coordination, public information and community response, and
- **Secondary**: fatality management services, forensics and attribution, infrastructure systems, mass care services, and on-scene security and protection.

Comparatively, JCTAWS assesses the municipality with more emphasis on situational assessment, access control and identify verification, and infrastructure systems. However, both JCTAWS and IEMC assess core capabilities such as interdiction and disruption, public health, and medical preparedness and response. The programs appear to diverge in the process selection of participant municipalities. The JCTAWS process is sensitive and therefore is not able to be shared with the general public. However, the information within the twenty-four JCTAWS summary reports indicates that participant jurisdictions are major metropolitan areas.[64] The IEMC staff selects a jurisdiction after it applies and is scored on a variety of elements. Chiefly, jurisdictions are assessed and measured based upon the likelihood of both the threat and consequence. The IEMC assessment measures four core areas on a scale from one to five: population, threat (based upon a restricted assessment), national events, and population density. Applications can receive extra points if other increased factors are present, such as a major critical infrastructure (transportation hub, port), support infrastructure (required support due to isolation or support that crosses state lines), recent non-natural disaster, and a concentration of collegiate institutions. Appendix Table 3 illustrates both the core area and increased factors scoring matrix.

[64] For the purposes of this thesis, a major metropolitan area is categorized by population and is within the top 100 largest cities in the United States.

1. Key Themes—JCTAWS

For the purposes of this section, twenty-four summary reports were qualitatively analyzed for common themes. Each report covers one iteration of a JCTAWS course, which includes the summary assessment by the JCTAWS that identifies the capabilities and gaps of the subject municipality. The numbered list items throughout this section present the most important findings that relate to CCA strategic planning and preparedness.

1. Of the twenty-four JCTAWS summary reports analyzed, 91 percent (n=22) did not have a unified plan, which also includes a multi-discipline response and multi-agency coordination plan, to respond to a CCA. The NPR highlights the necessity for a unified plan throughout all five core capabilities and encourages communities to "establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities."[65]

2. In each of the twenty-four reports, first responders indicated that they lacked one or more of the following: enhanced high-threat training to respond efficiently to a CCA, joint-integrated training with other public safety disciplines, policy and understanding of roles, and advanced medical training (Multi-assault Counterterrorism Action Training, Tactical Emergency Casualty Care, and Paramilitary Attack Counter Offensive Plan).

The second finding is important because it suggests that there may be barriers or operational deficiencies that inhibit joint-integrated training. Although the strategy of joint first responder training is not new, it remains a significant challenge. In 2013, FEMA recognized that in order to "increase survivability of victims," first responder

[65] DHS, *National Preparedness Goal*, 6, 9, 11, 14, 18.

public safety agencies must plan and train together.[66] In a 2014 Naval Postgraduate School thesis, Keith Johnson recommended that first responder agencies "develop and implement regularly established joint training and exercises" in order to increase familiarization in cross-discipline policy, capability and equipment.[67]

3. Thirty-three percent of reports indicated that formal mutual aid agreements or memoranda of understanding (MOUs) between public safety agencies and regional partners are non-existent. Rationally, this finding could also imply that 67 percent of JCTAWS jurisdictions did have some form of a mutual aid or MOU, though it is not within the scope of this thesis to determine this holistically. However, it can be assumed that the need for MOUs and mutual aid agreements is important to state and local jurisdictions.

The concept of MOUs and mutual aid agreements is highlighted in two documents, the 9/11 Commission Report and the NPG. The 9/11 Commission Report states:

> Public safety organizations, chief administrative officers, state emergency management agencies, and the Department of Homeland Security should develop a regional focus within the emergency responder community and promote multi-jurisdictional mutual assistance compacts. Where such compacts already exist, training by their terms should be required.[68]

Comparatively, the NPG urges mutual aid and MOUs under the response mission area and guides jurisdictions to "establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities."[69] Absent a public safety or regional MOU or mutual

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[66] FEMA, "Fire/Emergency Medical Services Department Operational Considerations and Guide for Active Shooter and Mass Casualty Incidents" (white paper, U.S. Fire Administration, 2013), 4, https://www.everyonegoeshome.com/wp-content/uploads/sites/2/2014/04/active_shooter_guide.pdf.

[67] Keith H. Johnson, "Changing the Paradigm: Implementation of Combined Law Enforcement, Fire, and Emergency Medical Service (EMS) Cross-disciplinary Response to Hostile Events" (master's thesis, Naval Postgraduate School, 2014), 91, http://www.dtic.mil/docs/citations/ADA620912.

[68] National Commission on Terrorist Attacks upon the United States, *The 9/11 Commission Report* (New York: W.W. Norton, 2004), 397.

[69] DHS, *National Preparedness Goal*, 14.

aid plan, states can request assistance from other states through the Emergency Management Assistance Compact.[70]

4. Fifty-four percent of the reports indicated that there are gaps in regional mass-casualty incident (MCI)/medical coordination plans, or that they do not exist. Conventional MCI plans prescribe the rapid response of a large number of emergency services resources to the scene of a disaster, large accident, or domestic terrorism event. An MCI is traditionally inclusive of emergency responders, emergency transport vehicles, and hospitals. When an MCI plan is activated, first responders conduct functional tasks such as triage, treatment, transportation, and hospital coordination. Having no MCI plan in place could result in increased treatment and transportation times, increased morbidity, and increased coordination with hospitals and law enforcement agencies.[71]

A 2013 report by the Federal Interagency Committee on Emergency Medical Services found similar problems with the implementation of local MCI plans. The analysis, based upon a national emergency medical services (EMS) assessment, found that 72 percent of respondents had only developed an EMS-specific mass casualty plan, and just 38 percent of those respondents stated the ideas were implemented.[72] The benefits from an MCI plan were exemplified during the 2015 San Bernardino shooting, when fire and EMS personnel were able to triage, treat, and transport all victims in just under fifteen minutes.[73]

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[70] DHS, *National Response Framework*, 29.

[71] Brian A. Jackson, Kay Sullivan Faith, and Henry H. Willis, *Evaluating the Reliability of Emergency Response Systems for Large-Scale Incident Operations* (Santa Monica, CA: RAND, 2010).

[72] FICEMS, "National Implementation of the Model Uniform Core Criteria for Mass Casualty Incident Triage" (prepublication document, National Highway Traffic Safety Administration, 2013), 5, https://www.ems.gov/nemsac/dec2013/FICEMS-MUCC-Implementation-Plan.pdf.

[73] Rick Braziel et al., *Bringing Calm to Chaos: A Critical Incident Review of the San Bernardino Public Safety Response to the December 2, 2015, Terrorist Shooting at the Inland Regional Center* (Washington, DC: Department of Justice, 2016).

2. Key Themes—IEMC

1. Of the ten reports analyzed, 80 percent (n=8) of course participants stated that their community lacked a unified response framework for a CCA.

This percentage is slightly lower but within the range of the JCTAWS finding regarding a unified response plan.

2. Two findings are similar—100 percent of reports stated that municipalities lacked a plan to manage the potential for first responder self-convergence to the scene of a CCA, and 50 percent (n=5) of reports stated that municipalities either lack a formal first responder or medical recall plan, or that the plans had not been updated or tested.

The goal of a self-convergence or recall plan is to control first responders from deploying or arriving to a scene without specific direction or without first being requested. A self-convergence policy may define a protocol for the communication and recall off-duty staff, or perhaps outline mutual aid assets. The 2008 National Response Framework suggests that coordination of response actions is a baseline priority and that such responses to incidents are activities that occur through structures, and assigned roles and responsibilities.[74]

3. First responder disciplines indicated that joint training on high-threat response and other critical areas such as incident command, unified command, and multi-agency coordination are insufficient or lacking.

This finding is on target with the JCTAWS findings. The National Response Framework suggests that partnerships are essential to preparedness and that activities should be coordinated across disciplines and jurisdictions.[75]

4. Eighty percent (n=8) of reports indicate that the response team lacks regional plans for a mass casualty incident, that an existing plan is outdated, or that there is no formal hospital coordination plan.

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[74] DHS, *National Response Framework*.

[75] DHS.

Although this percentage is higher than in the JCTAWS findings, a reasonable inference is that JCTAWS participating jurisdictions are greater in size and have more capability. However, the benefits of a regional MCI plan and hospital coordination plan are vital to patient transport and treatment, as well as to the management of the incident.

E. CHAPTER SUMMARY

Of the thirty-four JCTAWS and IEMC jurisdictions analyzed, 90 percent (n=30) did not have a multi-agency unified response plan to address CCAs. This is problematic for two reasons. First, federal guidance has suggested the need for such a plan, and second, after-action reports have highlighted success stories involving unified response plans during real incidents. From the federal level, the Gilmore Commission recommended that "there should be a national level strategy on combating terrorism that clearly delineates and distinguishes Federal, state, and local roles and responsibilities and articulates clear direction for Federal priorities and programs to support local responders; and a comprehensive, parallel public education effort."[76] At the state and local level, prior to the 2013 Boston Marathon bombings, federal, state, and local agencies trained and collaborated for months. In the months leading up to the race, the Boston area participated in a "comprehensive, multi-jurisdictional, multi-disciplinary" planning process.[77] Specific to the unified response plans and preparedness, the final report on the marathon bombing incident applauded success and best practices in the pre-development of relationships among leaders, integrated public safety activities before the event, and participation in multi-jurisdictional exercises.

Chapter III assesses participant progress and preparedness one to six years after the JCTAWS or IEMC program. This assessment, in the form of an online anonymous survey, adds value to Chapter II and helps answer the research questions.

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[76] Susan B. Epstein, *US Public Diplomacy: Background and the 9/11 Commission Recommendations* (Washington, DC: Congressional Research Service, 2005), 8.

[77] Massachusetts Emergency Management Agency et al., "After Action Report for the Response to the 2013 Boston Marathon Bombings" (report, City of Boston, 2014), 3, http://www.mass.gov/eopss/docs/mema/after-action-report-for-the-response-to-the-2013-boston-marathon-bombings.pdf.

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III. QUALITATIVE DATA ANALYSIS: RESULTS

We do not look for what we do not know to look for.

—Colin Gray

A. METHODOLOGY

To measure the impact and advancement of the JCTAWS and IEMC programs' findings and recommendations, the author developed a voluntary survey for past participants of each program. The survey, entitled "JCTAWS/IEMC Participant Survey," was designed to reach the state and local point of contact (POC) involved in the planning process for JCTAWS or IEMC. The POCs have a major role in the coordination of logistics and program development for each respective JCTAWS or IEMC delivery and are either in the law enforcement, fire service, or emergency management field for a particular jurisdiction. These contacts were obtained through FEMA and remained anonymous throughout the study. The survey was designed to gain better insight into perception of the overall program, ways to improve each program, and specific barriers to fulfilling the findings and recommendations provided by the JCTAWS or IEMC team. Furthermore, the survey assessed the POCs' perceptions and observations about their agency's progress or lack of progress toward implementing action to address the recommendations.

The survey was created and delivered through Lime Survey, an approved Naval Postgraduate School Enterprise Survey tool. This tool allows both the questions and responses to remain secure within the Naval Postgraduate School server, which ultimately protects the information and data within the survey. The survey was built so that the participants remained anonymous in order to produce better-quality answers. In sum, no names or Internet Protocol identifiers were collected or requested. Exercising the list of contacts obtained through FEMA, the Lime Survey link was shared through an invitational email. Within the email, each contact was added to the blind courtesy copy section, so that no participant could see who else was participating. This method also

protected the invitees should a participant forward the email to another person; due to the anonymous and voluntary nature of the survey, it is not known if this occurred. As indicated in the email invitation, selecting the provided link indicated agreement to participate in the survey.

In total, forty-one state and local POCs were contacted via email and provided with an explanation for and link to the survey. It is important to note that a wide variety of public safety participants attend each JCTAWS or IEMC delivery, including law enforcement, firefighters, emergency managers, public health/healthcare providers, and government and private sector partners. This survey did not measure every attendee from each JCTAWS or IEMC, although doing so would have provided a better assessment and yielded a higher number of responses. Therefore, this survey was limited by jurisdictional scope, as the JCTAWS deliveries studied involved up to fifty-nine different agencies.[78] In other words, because large numbers of agencies work together during the exercises, the results reflect the program delivery's dynamic, and the need for involvement from a variety of resources and skillsets when jurisdictions prepare for and respond to a CCA. However, many of the POCs contacted to participate in the survey remain involved in regional first responder programs and preparedness activities.

The survey contained fifteen questions designed to assess the JCTAWS or IEMC program's strengths and weaknesses, as well as barriers and gaps identified after the exercise conclusion. Participants were asked to rate their experiences with the course and to articulate their successes and struggles when addressing the various gaps from the JCTAWS or IEMC report. The survey was composed of multiple-choice questions, some of which allowed the participants to include comments; yes-or-no questions; questions that asked the participants to indicate a value rating from low to high; and questions that evaluated positive or negative changes in preparedness and resiliency.

The survey questions were developed on May 5, 2017, and approved by the Naval Postgraduate School Institutional Review Board on June 28, 2017. On July 10, 2017, the

[78] The Washington, DC, JCTAWS involved fifty-nine organizations from Washington, DC, Maryland, and Virginia; participants were local first responders, as well as representatives from various federal agencies and private-sector businesses.

first email was delivered to forty-one email contacts, and recipients began adding data and comments to the survey that same day. The survey link expired on July 31, 2017, and all data were archived for analysis and secured on the Naval Postgraduate School server.

B. PARTICIPANT SURVEY ANALYSIS

The survey was available to participants for twenty-two days and generated twenty-six responses, which means 63.4 percent of the intended number of recipients completed the survey. However, out of the twenty-six responses, only fifteen (57.6 percent) completed the entire survey. The other twelve responses were either partially completed (n=9, or 34.6%), or the link was selected, and the participant did not go further than the first question (n=3, or 11.5%). The rest of this section contains a discussion and analysis of the responses.

The initial part of the survey included a demographics section that asked the following questions:

- What discipline is your agency?
- Which other disciplines were represented in the JCTAWS/IEMC program that you participated in? (Participants selected from fire department, police department/sheriffs, emergency medical services, emergency management, public health/healthcare, government/elected official, and private sector).
- Aside from the JCTAWS or IEMC program, what other programs have your agency or jurisdiction participated in that address the preparedness of asymmetrical threats? (Participants selected any of the following: FBI active shooter program, Office for Bombing Prevention courses, other FEMA courses, private-sector training; there was also a comment box for participants to indicate programs not listed).

These three demographics questions were designed to establish a baseline for the research project and gain additional insight into the POC, other participating first

responder disciplines, and their level of exposure to other federal preparedness programs. The purpose of measuring these demographic areas was to assess the disciplines that are involved in the JCTAWS and IEMC training courses. First, the author wanted to know which disciplines the POCs represented and if there were patterns of under- or over-representation. This is relevant from a planning perspective because the POCs could, perhaps, influence the course trajectory, which creates an unintended outcome that challenges one discipline and fails to take another into account. Evaluating the participant's discipline, and which disciplines were represented, qualifies or validates the unified mission of JCTAWS and IEMC. Lastly, the author assessed whether the jurisdiction had some exposure to other federal courses. Although the selections within the survey were limited, the results could yield some interesting data points. For example, is it predictable if a jurisdiction that has completed other courses designed to enhance preparedness, is better situated or results in a smaller number of gaps?

1. Question 1

What discipline is your agency?

Question 1 established a participation baseline for each state and local discipline in order to determine differences in responses. Of the twenty-six participants, 88 percent (n=23) completed this question. Two responses resulted from the "other" category, which was a comment box and not reflected in the findings shown in Figure 1. These responses indicated that one participant was from a "regional multi-discipline taskforce" that includes "law enforcement, fire department, emergency medical services, etc." The other response indicated that the participant was from a "fire department based emergency management" system.

The responses were as expected except for one factor: emergency management. In developing this question, the author did not predict that emergency management POCs would be heavily represented because emergency management may be limited by baseline capabilities, namely prevention, protection, and response. The author expected higher numbers for traditional first responder disciplines simply because they have a

more traditional role in emergency response and incident management.[79] The author's assumption is that the emergency management agencies that participated in JCTAWS or IEMC were in a better position to manage the programs when compared to other first responders.

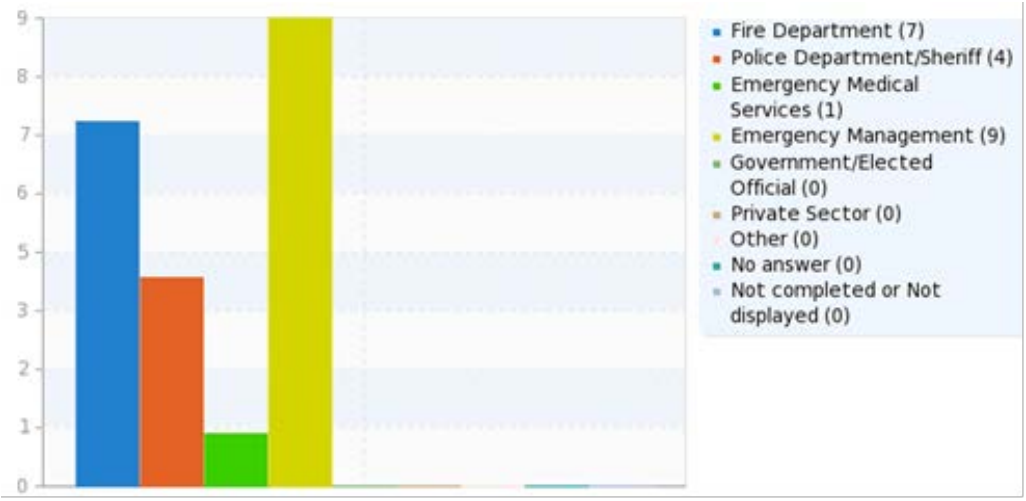

Figure 1. Question 1: Agency Disciplines

2. Question 2

Which other disciplines were represented in the JCTAWS or IEMC program that you participated in? (Select all that apply).

This question established the number and types of disciplines that participated in each respective program. Of the twenty-six participants, 92 percent (n=24) answered this question. The results (see Figure 2) indicate that a majority of first responder participants (90 percent) come from the law enforcement, EMS, and emergency management disciplines, followed by (76 percent) the fire and public health/healthcare disciplines. Four additional separate responses in the "other" category included: schools, legal (U.S. attorney, district attorney, city attorney), volunteer agencies, and non-governmental agencies (not specific).

[79] This observation is based upon the author's twenty-five years' experience in the fire and rescue services. Northern Virginia Emergency Management systems, for example, are not considered emergency response functions. However, they have responded to the scene for large campaign events, or responded to their respective emergency operations center.

The responses to this question were not unanticipated, although none of the responses indicated the inclusion of military or National Guard. In both the Mumbai and Paris attacks, the military had a major role in neutralizing the threat and restoring order to the cities. Additionally, military assets can also support incident command, armored vehicles, air evacuation and surveillance, and more.

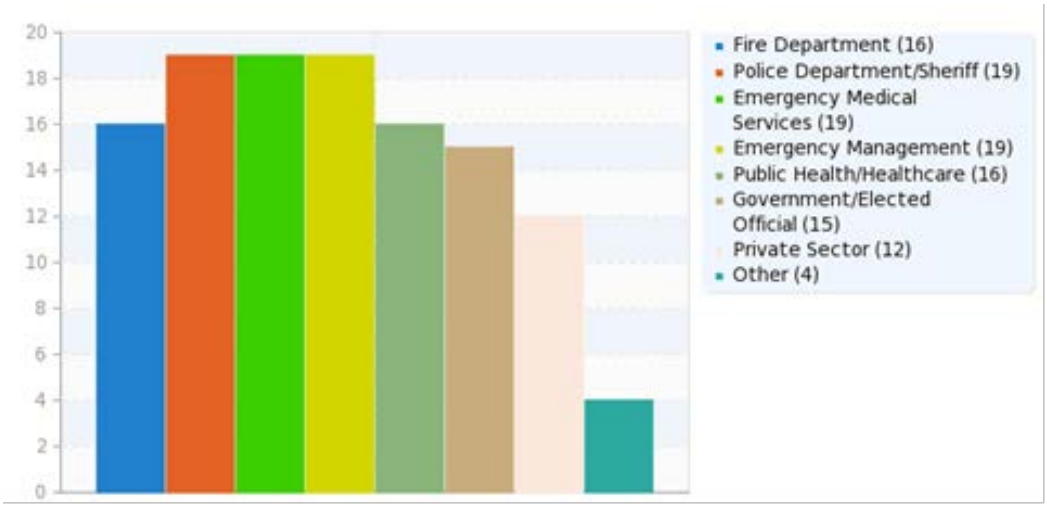

Figure 2. Question 2: Other Disciplines Represented during Program Exercise

3. Question 3

Aside from the JCTAWS or IEMC program, what other programs have your agency or jurisdiction participated in that address preparedness and resiliency for asymmetrical threats?

This question measured the POC's access to and participation in various federal and private-sector programs that address terrorism preparedness at the state and local level. Twenty-four respondents indicated that the majority of training has occurred within available FEMA courses, although there was no specificity as to which courses the answers represent. One response in the "other" category indicated that the respondent's agency has participated in Advanced Law Enforcement Rapid Response Training (ALERRT), held at Texas State University, which focuses on active shooter response and mandates that attendees are law enforcement officers. The second respondent indicated

that he or she had received fusion center training. Figure 3 shows the response breakdown.

Two data points are noteworthy. First, the FEMA courses available to state and local agencies cover a wide array of opportunities; state and local first responders attend these courses to enhance their capability to prepare for and respond to a variety of threats.[80] The data point relating to private-sector training is therefore surprising. Although the actual private-sector courses were not measured or provided in this research, this finding is certainly important to explore if similar federal courses are available at no cost to the state and local agencies. It is possible that the private-sector courses have identified some needs of state and local first responders that are beyond the scope of the federal programs.

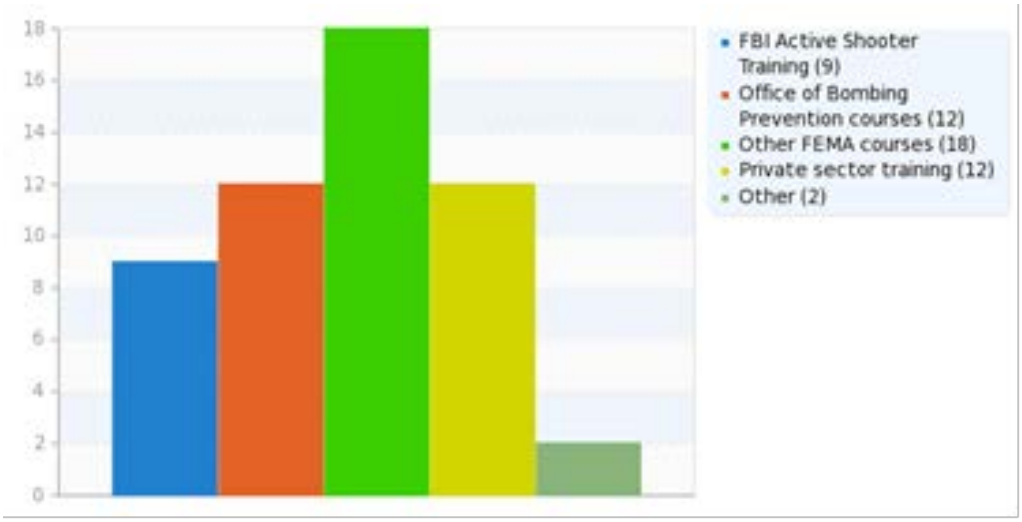

Figure 3. Question 3: Other Programs

The following questions probed the pre-program activities specific to the identification of gaps and actions before JCTAWS or IEMC delivery.

[80] "Emergency Management Institute (EMI): National Preparedness Directorate National Training and Education Division," FEMA, accessed October 9, 2017, https://training.fema.gov/training.

4. Question 4

Prior to the JCTAWS or IEMC delivery, was your agency or jurisdiction aware of the gaps or issues outlined in the findings and recommendations?

This question queried the participants about their awareness of gaps and barriers relating to CCA preparedness before attending JCTAWS or IEMC. Of the twenty-six participants, 65 percent (n=17) answered this question with "yes" and 31 percent (n=8) reported that they either were not aware, or were unsure if they were aware before the program; nine chose not to answer the question (see Figure 4).

Figure 4. Question 4: Prior Awareness of Gaps

5. Question 5

Relating to question #4, were these gaps identified in the self-assessment?

This question was designed to add value to the previous question by identifying when the gaps or findings were discovered. More specifically, this question attempted to determine whether the gaps were identified during the self-assessment phase before the JCTAWS or IEMC, or in some other way. The results indicate that 46 percent (n=12) discovered the gaps during the self-assessment, whereas 19 percent (n=5) learned of the gaps during the official findings and recommendations report; nine participants chose not to answer the question (see Figure 5).

Questions #4 and #5 are positively correlated. Accordingly, in question #4, four respondents indicated that they were not aware of the gaps prior to the JCTAWS or IEMC. This matches question #5 and the number of respondents (n=5) that discovered gaps only in the summary report. Therefore, this highlights the worth of both the self-assessment prior to the JCTAWS or IEMC course, and the exercise that is designed to test and examine local policies and procedures.

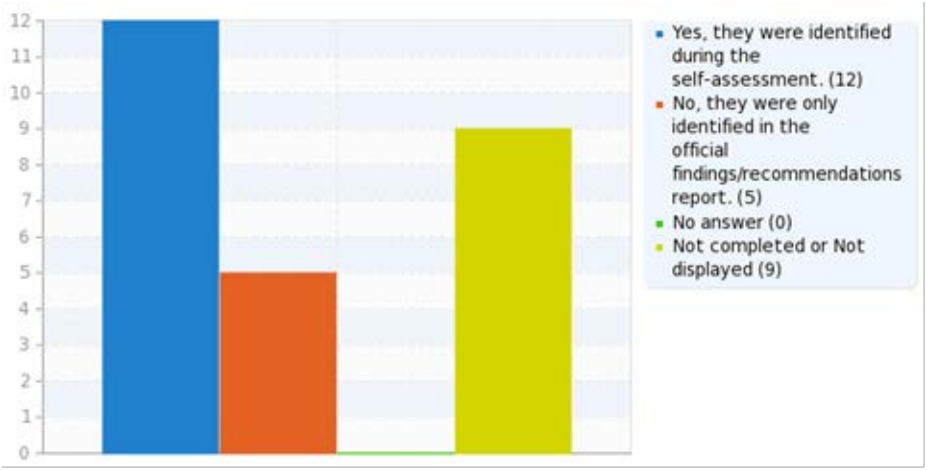

Figure 5. Question 5: Gaps Identified in Self-assessment

6. Question 6

Relating to question #5, if you answered yes or no, please indicate your actions prior to JCTAWS or IEMC that you addressed, or attempted to address.

This question extracts the municipality's specific actions toward addressing, or not addressing, gaps discovered before the JCTAWS or IEMC.

While the responses represent the entirety of the responses, surprisingly the participants did not use terms that might be found in or as part of a CCA incident, such as preparedness, IED, complex, mitigate, and attack. Words such as CCA, coordination, training, shooter, and unified were mentioned only one to three times throughout the responses. Moreover, "response," a baseline capability, was the most-used term, and yet the word "preparedness," the ultimate goal, was not mentioned once.

The following are examples of a wide variety of participants' answers relating to actions taken prior to JCTAWS or IEMC. For coding purposes, each response is categorized by the discipline (FD=fire service, PD=police/sherrif, EM=emergency management, TF=multi-agency task force) followed by the sequential number representing the order in which the respondent answered (i.e., FD01 was a fire department member and the first to return the survey).

- TF03—"No actions prior to JCTAWS other than active shooter training. Our focus is on integrated emergency response" and the task force has "bought into the concept of Rescue Task Force."
- EM05—"Hosted multiple terrorism, active shooter, [Rescue Task Force] courses, and countywide tabletop and functional drills."
- EM08—"Coordination and communication between government and private sector"; "MCI Response and social media challenges."
- FD11—"Warm zone integration, tactical EMS, and unified command."
- EM14—"Training, Planning, Purchasing equipment, Conducting gap analysis, and Exercises (Table top & Full-Scale) all related to a CCA event."
- FD16—"Serious conversations about an interdisciplinary program to allow for a more collaborative effort."
- EM22—"Integrated response to high-threat incidents, medical surge, equipment needs for specialized teams, alert and warning/mass notification systems."
- EM26—"DHS capability assessment in conjunction with the Protective Security Advisor (PSA) on critical infrastructure assessment."

It is important to note that the survey did not assess the effectiveness or status of actions taken prior to JCTAWS or IEMC, or if those actions taken were positive or negative.

The following questions targeted the JCTAWS or IEMC program; participants were asked to answer specific questions about the respective course.

7. Question 7

Please indicate how challenging the scenario was for your agency or jurisdiction of the JCTAWS/IEMC program. (1 not challenging, 5 very challenging).

This question intended to determine if the JCTAWS or IEMC scenario was representative of a CCA and measure the level of difficulty for the participant. The results show that seventeen of the twenty-six respondents answered this question. Also, 29 percent (n=5) found the JCTAWS or IEMC scenario challenging and scored this question a five, while the majority, 46 percent (n=8) selected the next lower answer, four out of five. Just over 23 percent scored this question a three, which represents the median between "challenging" and "not challenging." Fifty-two percent (n=9) chose not to complete this question. Figure 6 shows the breakdown of responses.

The answers within each category were expected. Both JCTAWS and IEMC develop scenarios that are designed to significantly strain and challenge the local first responder community in order to identify challenges and gaps before a CCA occurs. Moreover, this signifies that a CCA will be challenging for most major cities and municipalities, but also presumably that the JCTAWS and IEMC training was valuable because it addressed major challenges experienced in Paris and Mumbai, for example.

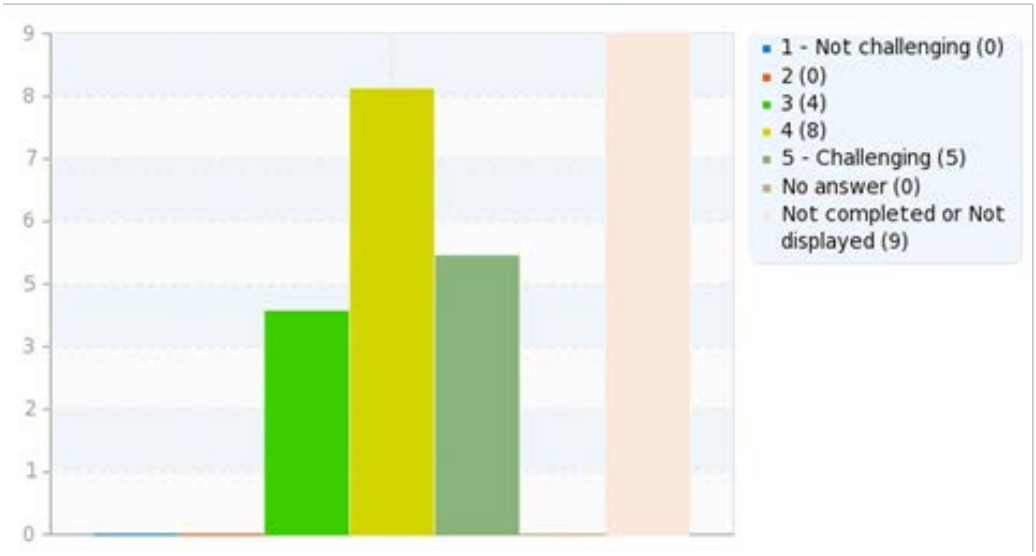

Figure 6. Question 7: Program Level of Difficulty

8. Question 8

Please rate the value of the JCTAWS/IEMC program and findings to your agency or jurisdiction (1 low, 5 high).

This question measured the value and usefulness of the JCTAWS or IEMC program. Of the seventeen responses, 76 percent (n=13) indicated that the program (JCTAWS or IEMC) was of high value. The balance of responses, 24 percent (n=4) ranked it a "four" (see Figure 7)

The answers to this question and the next draw a direct parallel between the program delivery and its importance to the state and local agency. The participants view both JCTAWS and IEMC as high-value courses and all-inclusive programs to address CCAs.

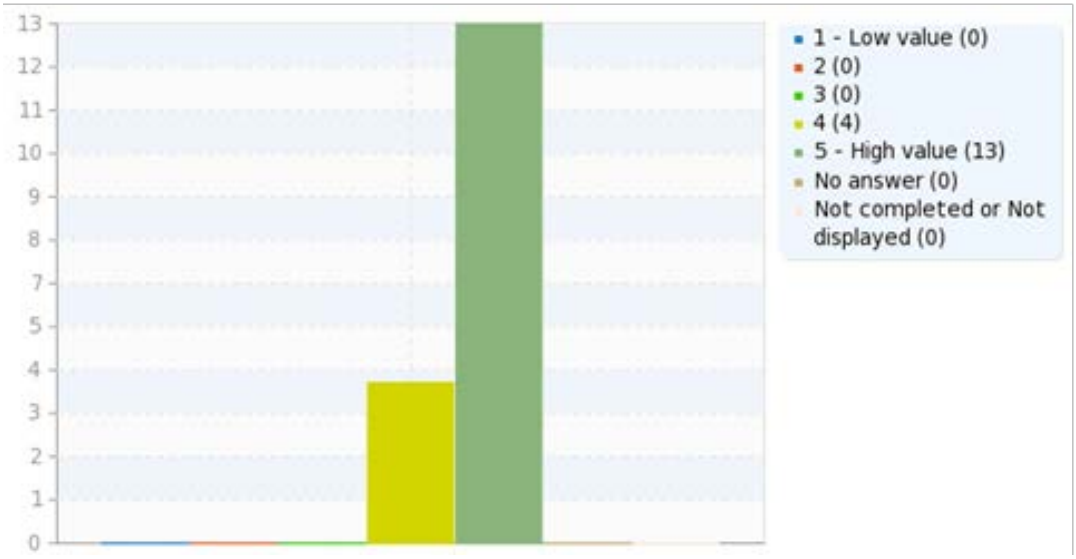

Figure 7. Question 8: Program Value

9. Question 9

Please rate the comprehensiveness (relative to your threat landscape and capabilities) of the JCTAWS/IEMC program (1 low, 5 high).

This question measured the content and scope of each course. A large majority of respondents, 76 percent (n=13), indicated that the course was of "high comprehensiveness," followed by 18 percent who selected a "four" (see Figure 8).

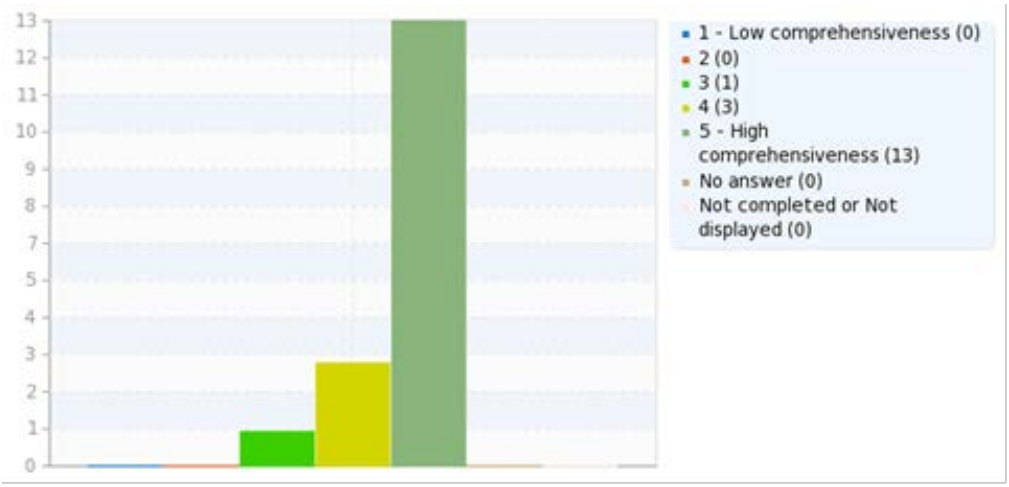

Figure 8. Question 9: Program Comprehensiveness

10. Question 10

Did you have any follow-up discussion with the JCTAWS or IEMC program course staff after the course delivery?

This question assessed the level of communication once the program delivery was complete and the findings and recommendations were shared with the state and local agency. The answers were limited to "yes" or "no." Assessing post-program communication levels can explain the existence of post-program activities and federal support. The findings indicate that 71 percent of respondents (n=17) received some form of communication after the program (See Figure 9). It is not known whether the 71 percent were from JCTAWS or IEMC.

However, almost 30 percent (n=5) of respondents indicated that they had no follow-up with either the JCTAWS or IEMC program staff. If follow-up is part of the JCTAWS or IEMC programing, then few (if no) respondents should have chosen this option.

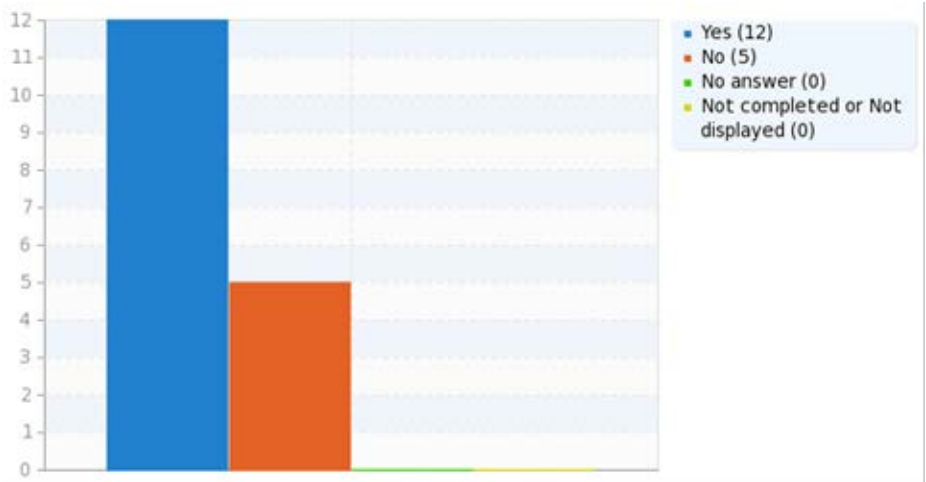

Figure 9. Question 10: Program Follow-up

11. Question 11

What would you change or enhance about the JCTAWS or IEMC program? What would you change and why?

Seventeen participants answered this question. To effectively capture each response, separate coding/sections were developed to place each response within a major category.

Addressing Gaps

- FD16—"Once jurisdictions are shown gaps, provide best practice for addressing the identified gaps."

Program Specific

- EM22—"Tailor scenario more to jurisdictional reality."
- EM14—"EMC—restructure awareness level modules from the program. These were very basic for a number of our personnel."

  "JCTAWS—Increase breakout sessions length. Many good discussions were brought up in these sessions. Additional time might have helped address issues identified."
- EM07—"I would've liked more interaction with NCTC to understand their role and how they can help."
- EM08—"I feel this is well done and benefits the locals. One thing I would add is once a participant is added to a working group that they receive an email explaining the reason they are in that group. We found first responders not understanding why they were in for example the hospital group. This caused them to just go to another group."
- EM03—"Possibly make it an additional day longer to start the [after-action review] process."

- EM05—"Great program. We were the pilot program and that was back in 2014. Has most likely changed since then."

Collaboration/Involvement

- TF03—"Active shooter is simply the 'problem du jour' and frankly this will pass. We believe the greater challenge in getting our primary response disciplines to fully integrate their ops (i.e., starts with playing nice together). Integrated response ops have much more utility and application that goes well beyond the coordinated, complex attack scenario, and impacts our day-to-day responses in the all-hazards world. In short—it's win / win."

- PD23—"I think the program is great. I do wish more of our local representatives involved in planning had responded with detailed information during the planning process but that is our own issue."

- FD10—"Bring in more municipal government departments that are not normally emergency services; highway, PIO, and recreation."

Funding/Capability

- EM26—"Although the briefing was specific to our jurisdiction and truly eye-opening, it did not provide funding/grant resources. For local jurisdictions, it is extremely difficult (if not impossible) to address capability gaps in light of diminishing and/or level funding while the effects of major disasters and other emergencies continues to increase."

- PD09—"Funding. Host agencies were responsible for the bulk of the funding."

No Change or No Comments

- FD24—"Nothing."

- FD25—"Nothing."

- PD04—"I would not change or enhance the JCTAWS program. It was just right for our community."

- FD06—"None."

Most responses were cosmetic in nature and ranged from a need to involve more of the community and non–first responders to objective recommendations to enhance either program. Two key areas stand out as important and are addressed within this thesis: funding and support to address gaps after the program.

12. Question 12

Has your agency or jurisdiction implemented any JCTAWS or IEMC findings and recommendations?

This question assessed whether the state and local agency has made progress related to the findings and recommendations from the JCTAWS or IEMC course. A total of fifteen responses were collected, and only two respondents answered the question thoroughly with either some gaps addressed, or specific numbers of identified gaps addressed. However, 80 percent (n=12) of the respondents indicated that they had implemented JCTAWS or IEMC findings and recommendations, while 20 percent (n=3) reported that there were barriers or contributing factors (i.e., funding, resistance to change, protocol) that did not allow implementation (see Figure 10). Some of the responses indicated that progress was being made, including in the following areas:

- PD04—"Suspicious Activity Reporting, Unified Response Plan, and Tactical Emergency Casualty Care training."

- EM14—"Findings were added to a comprehensive improvement plan matrix that is used during all exercises."

- PD23—"Development of a fusion center and agreements for joint police and fire department training."

Although most of these answers were in the "yes" category, it is surprising that most respondents were not able to articulate the number of gaps that had been addressed

within the summary report. In theory, even if the agency had addressed one gap, the POC could have answered "yes." However, it would have been helpful to also measure the number of gaps to a specific jurisdiction as well as the number of gaps completed or process to show progression.

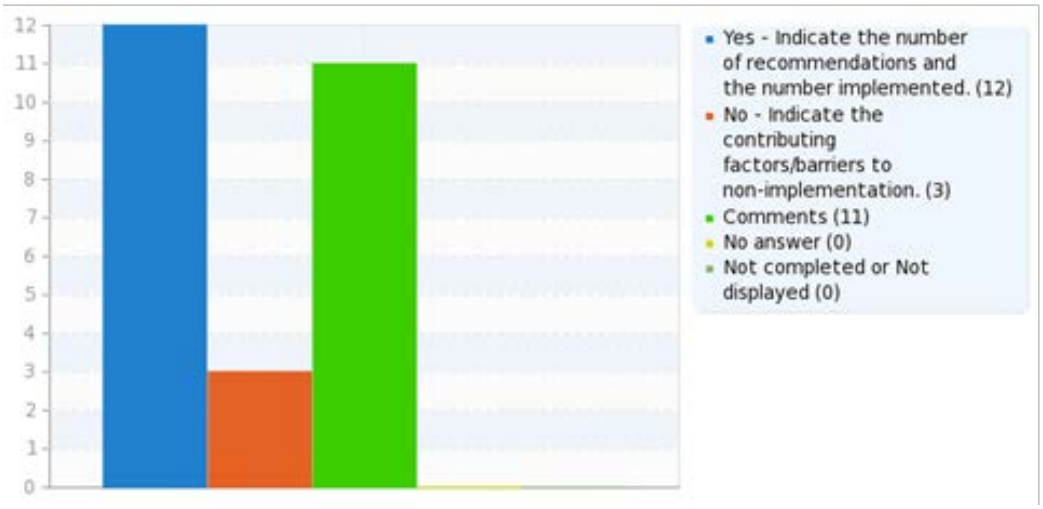

Figure 10. Question 12: Recommendation Implementation

13. Question 13

What effect has the JCTAWS or IEMC program had on your agency or jurisdiction's resiliency (ability to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies)?

As part of the research, the author wanted to gauge not just preparedness, but how state and local first responders were able to maintain a level of resiliency during the incident. In theory, this question would have measured the resiliency of an agency based on both a baseline capability and an exercise or real-world conflict. In reality, this question was posed and answered on the assumption that resiliency was factored and measured by the participant. Fifteen participants responded to this question, and 60 percent (n=9) of them stated that JCTAWS or IEMC had a positive impact and resulted in increased resiliency. One respondent, or 7 percent, reported a negative effect and no change in resiliency, while another respondent indicated a neutral perspective. Figure 11 shows the response breakdown.

The answers provided here do not match up to the previous answers in question #12. Resiliency, in sum, is the ability to adapt and rapidly recover from disruption. A majority of respondents in question #12 answered that they had addressed gaps found within the summary report. However, none of the answers suggested implementation or application of resiliency measures. A possible explanation for this problem is that the respondents *feel* that they are more resilient because they attended the JCTAWS or IEMC course. Assessing first responder resilience could be a thesis in and of itself. The limitation to this problem, however, is that the participants may have only assessed their resiliency through an administrative exercise, rather than through an emergency incident that that truly evaluates ability to rapidly recover from disruption.

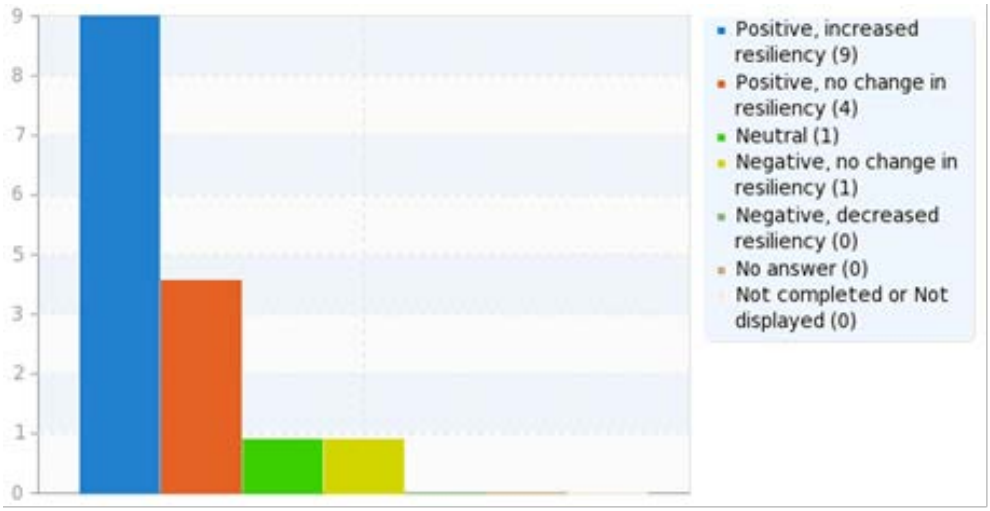

Figure 11. Question 13: Program Effect, Resiliency

14. Question 14

What effect has the JCTAWS or IEMC program had on your agency or jurisdiction's preparedness (ability to prepare, train, and enhance current programs or processes prior to an attack)?

A majority, or 89 percent (n=13), answered this question positively and 73 percent of responses indicated both a positive effect and increased preparedness (see Figure 12). The remaining 13 percent of respondents indicated a neutral perspective. The totality of responses suggests that JCTAWS and IEMC have a positive impact on preparedness activities.

Similar to question #13 findings, the responses to question #14 indicate that a domestic model for CCA preparedness does not exist. Agencies or jurisdictions may feel more prepared, but how that preparedness is measured and exercised after JCTAWS and IEMC is not consistent. A majority of respondents considered their agency or jurisdiction positively affected by the JCTAWS or IEMC, which could include the introduction of new policies or programs. However, to indicate an increase in preparedness would imply that the agency or jurisdiction has addressed gaps and assessed its preparedness level against the federal preparedness baseline capabilities. There are not enough data points associated with this survey to draw a firm conclusion, although the following question provides some level of clarity.

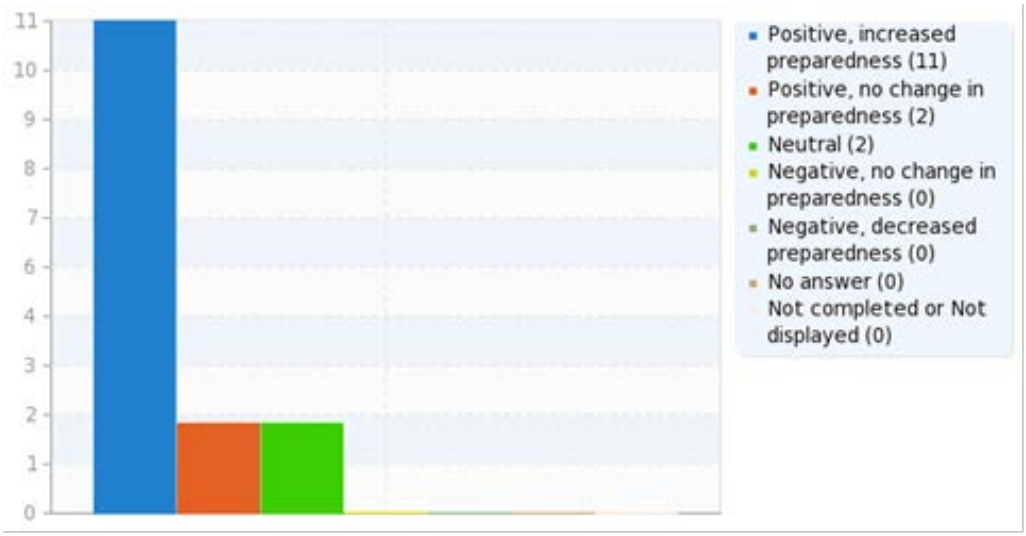

Figure 12. Question14: Program Effect, Preparedness

15. Question 15

Relating to questions #13 and #14, how has your agency or jurisdiction further prepared for a complex coordinated attack? (Please be specific.)

Fifteen participants responded to this question and many responses were very specific in explaining proactive enhancements. The following are examples of specific actions taken by state and local responders that have attended JCTAWS or IEMC; some responses have been rephrased or redacted to prevent association with a specific locality or agency.[81]

- FD25—"More training."
- TF02—"We are looking at long-term solutions, as opposed to short-term solutions gains with no sustainability."

  This agency has hosted a suite of regional training that is multi-disciplined (law enforcement, fire department, intelligence functions), and also enhanced working relationships with state, local, and federal agencies that would respond to a CCA.
- PD04—One agency is working with the local FBI to develop a unified terrorism response framework, which focuses on reducing confusion and increasing communication when a terrorist attack occurs. This agency has conducted a variety of high-threat training and obtained equipment to address tactical emergency casualty care capabilities, and has implemented various active-threat aspects of the "Hartford Consensus." Further, the respondent recognized the value of both the fusion center and partnerships at the state and federal level and implemented the first "See Something, Say Something" program in his or her jurisdiction.
- EM05—"Implemented the rescue task force model and trained over 2000 fire, EMS, and law enforcement partners."

[81] Some responses included the participant's agency or jurisdiction. List items without quotation marks are either redacted to protect the participant, or the author has paraphrased the response.

- FD06—“We are working on Suspicious Activity Reporting System, coordination between entities, intelligence, information sharing, tactical emergency casualty care. It is a little slow going due to funding and the interest of elected officials, however it has been good for conversation.”

- EM07—“There is now an open dialogue, organizations (not just intelligence personnel) receive briefings on recent events, trends, and attack methods.”

- EM08—“Many measures have been done within committee but the implementation has been slow due to the challenges above and other public pressing issues.”

  “When requesting more time to prepare, more funding and commitment [to] day-to-day activities take priority. This is a challenge to get the buy-in for such advance measures when the elected officials do not see the true threat and only look at the ‘unnecessary’ cost.”

- FD11—“Other drivers have been used to prepare for CCAs. Not the JCTAWS recommendations.”

- EM14—“Identification of additional areas needing planning, training, or exercises. Additionally, we are always more prepared when our leadership is involved in major exercises or workshops.”

- PD23—“We have made positive changes as I described earlier in the survey. These were the most tangible benefits to the JCTAWS. In addition to those, I believe the biggest benefit was the fact that the exercise brought these topics to the attention of senior leadership in all the major disciplines in our region. The fact that agencies placed enough importance to have so many of our leaders attend was huge for us. It allowed for high-level discussions of important topics in a low-stress environment. Many of our leaders approached me days and even weeks later to compliment the

exercise. One of our colonels said it was the most beneficial exercise he had ever attended."

- EM26—"The IEMC course has increased our situational awareness and has improved overall multi-jurisdictional coordination including mutual aid, public information/messaging, and operational response. Moreover, there were several policy changes that either have been instituted and/or will be added to plans and training. However, in the equipment/technological, personnel and/or training (Tabletop/full scale exercise), there are funding constraints that prevent the jurisdiction from implementation."

- FD16—"More of a Public Safety approach and not Fire, Police, EMS, EM; but a real focus on integration, policy development and MOUs, regular integrated training, meetings with governmental and non-governmental partners, developing training and policy around everything, trends in the way we are being threatened, networking in the Intel community to stay updated on changing patterns."

The word cloud shown in Figure 13 represents the responses and common themes provided by the participants. Although the word "training" was used the most, it describes both the conducting of training and the need for CCA training.

Figure 13. Question 15: Terms Associated with further CCA Preparation

C. CHAPTER SUMMARY

This portion of the research was needed because, before this survey, data relating to JCTAWS and IEMC had not been collected to this degree. Even so, the information gleaned from the study does not represent all JCTAWS and IEMC participants during the 2011–2016 period. That fact alone is telling. There is no explanation for why less than half of the invitees decided to participate in the survey. Equally compelling is that 58 percent (n=15) of the twenty-six POCs completed the survey in its entirety. One assumption is that the respondents did not have the answers to uncompleted questions. Another assumption is that the questions were intrusive and could expose shortcomings identified in the findings report.

Conversely, there is limited scholarly research or literature on CCAs; the author's presumption was that more JCTAWS and IEMC participants would take interest and complete the survey entirely. One explanation of nonresponse involves the prospective respondent's lack of interest in the subject.[82] While this is impossible to measure within the scope of this research, the fact that only 56 percent (n=23) of the forty-one selectees started the survey and only 37 percent (n=15) completed the survey is troubling because they had an opportunity to contribute to an emerging homeland security topic. However, the author does acknowledge that the survey design and methodology could be improved.

The process of aggregating the data collected for this project uncovered a wealth of topical areas that point to increased preparedness, a variety of training and exercises, and state and local first responder challenges. In the next section, major themes and findings from Chapters II and III are highlighted.

[82] Floyd J. Fowler, *Survey Research Methods*, 3rd ed, vol. 1 (Thousand Oaks, CA: SAGE, 2002).

IV. CONCLUSION

> When the situation was manageable it was neglected, and now that it is thoroughly out of hand we apply too late the remedies which then might have effected a cure. There is nothing new in the story. It is as old as the sibylline books. It falls into that long, dismal catalogue of the fruitlessness of experience and the confirmed unteachability of mankind. Want of foresight, unwillingness to act when action would be simple and effective, lack of clear thinking, confusion of counsel until the emergency comes, until self-preservation strikes its jarring gong—these are the features which constitute the endless repetition of history.
>
> —Winston Churchill

This chapter has five parts. The first section discusses the findings and themes for both the JCTAWS and IEMC programs and recommendations for improvement. The findings are a result of content and thematic analysis of both the FEMA reports as well as the online participant survey. The second section includes recommendations and the third identifies implementation issues, next steps, and areas of further exploration. The fourth section discusses limitations, and the final section includes concluding remarks. In sum, the federal support arm that has a responsibility for CCA preparedness must concentrate on resilient adaptation and not on efficiency or maintaining the status quo. The current mechanism to prepare for a CCA mirrors that of an efficient machine rather than an adaptive model.

A. JCTAWS/IEMC FINDINGS

Participants involved in this research reported a positive evaluation of the overall program, including high marks for comprehensiveness, value, and degree of difficulty. Overall, the rating responses to survey questions in these three areas ranged from 4.05 to 4.7 on a scale of 1 (low) to 5 (high). This data is valuable for FEMA and other federal programs that are responsible for preparing and training state and local first responder agencies. The anonymous survey responses help identify how the attendees perceived the training program, and can thus guide course redirection or evolution.

1. Increased Resiliency and Preparedness

Municipalities conveyed they are more resilient and prepared because of their participation in the JCTAWS or IEMC course. However, a majority of respondents did not provide additional supporting explanation or substantiating examples. Those who did respond pointed to the importance of senior leadership attendance rather than specific factors of the course exercises themselves. Moreover, some respondents mentioned other programs that are within the scope of preparedness, but may not address CCA preparedness like JCTAWS or IEMC. This dilemma could stem from the lack of national strategy, or perhaps from the fact that the JCTAWS and IEMC programs as a whole do not have the capacity to provide additional guidance once the program is complete and the final report issued. In other words, end users could benefit from an additional phase in both programs that is designed to assist the participating agency with gap mitigation.

Maintaining the status quo is an option as well, but the data provided within this thesis recommends against doing so. To be sure, the 2016 National Preparedness Report (NPR) maintains that national preparedness and resiliency is accomplished through five core areas: prevention, protection, mitigation, response, and recovery.[83] In other words, preparedness and resiliency are goals of these core areas. And although the NPR did recognize JCTAWS and some steps the nation took to address CCAs, the report focused on preventing a CCA and not preparedness or resiliency, as state and locals "took steps to strengthen their ability to address complex terrorist attacks."[84] Nevertheless, despite significant ambiguity in national policy, this research shows improvement in state and local first responder preparedness through the JCTAWS and IEMC training and exercise programs.

[83] DHS, *National Preparedness Report*.

[84] DHS, 30.

2. Major Areas/Cities Do Not Have a Unified Plan to Respond to a CCA

It is not surprising that thirty-one out of thirty-two jurisdictions that have attended either JCTAWS or IEMC do not have a unified plan to respond to a CCA. Developing a domestic CCA plan prior to 2016, before the Paris attack in 2015, might have been akin to developing a plan for an asteroid strike or Ebola exposure; CCAs are low-frequency and high-risk events, they are not part of routine emergency response policy, and responders do not have any experience to help them develop a comprehensive plan for such events.

However, federal guidance dating back to 2001, such as the 9/11 and Gilmore Commission Reports, identify the need to address and prepare for emerging issues such as CCAs. Similar to the asteroid strike example, perhaps one reason that the federal government, and ultimately state and local governments, do not have a structured method to develop a unified CCA plan is because the United States has not yet experienced a CCA. Another practical explanation could be complacency. In late 2001, retired Colonel John R. Brinkerhoff described complacency as "an attitude of self-satisfaction that inhibits consideration of unpleasant things."[85] Or, put another way, the ego defies reality. There is a clear element of complacency related to this research, as discovered during examination of the online survey. Two specific questions and subsequent answers were surprising:

Question 12: *Has your agency or jurisdiction implemented any JCTAWS or IEMC findings and recommendations?* Respondents were encouraged to provide the number of recommendations implemented in a comment box. One participant stated "the areas for improvement were minimal," but the JCTAWS report for that same municipality identified twenty-five significant gaps. Those gaps included a lack of response plan to address a multi-site, multi-agency response to a terrorist attack; a gap in recalling emergency personnel; a gap in information sharing and situational awareness; and a gap in high-threat, multi-discipline training and equipment.

[85] John R. Brinkerhoff, "The Relationship of Warning and Response in Homeland Security," *Journal of Homeland Security* (December 2001), 6, https://www.hsdl.org/?abstract&did=442533.

Question 15: *Relating to questions #13 and #14, how has your agency or jurisdiction further prepared for a complex coordinated attack? (Please be specific).* This question included a comment box for the respondents to provide information about how they have furthered their training, policies, collaboration, or other related activities. The same participant stated, "Our agency and jurisdiction experienced [and incident]. Based on that [incident] response, it was clear that the area was prepared for the type of response needed during this incident."[86] In fact, this respondent's agency came under public, media, and emergency management industry scrutiny for its uneven response to the incident. The culture and danger of complacency is real, especially with a threat that, domestically, is new to first responders.

The second finding is that if a CCA occurs in the United States, the nation will experience the reverberation of the attack, much like the situation on the morning of September 11, 2001, and beyond. This is not to suggest that any one locality lacks the ability to manage the entire incident, although that capability remains relatively unknown. However, a CCA is the counter-argument to the notion that "all disasters are local." A report produced by Arlington County, Virginia, provides additional support to this claim. The report states, "Response to a terrorist incident will not be a local event. Preparedness, response, and recovery will be regional, and plans and funding should reflect this regionalism. Teamwork spanning the Federal, State, and local level is critical to a successful response and recovery."[87] Another report produced by the Arlington County Fire Department represents the U.S. geographical areas that responded to the Pentagon on 9/11.[88] In total, nine states and eighteen federal, state, local, and non-governmental assets (indicated in Figure 14) were sent requests for mutual aid.

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[86] Information was redacted to protect the identity of the participant.

[87] Arlington County, "Local Response to Terrorism: Lessons Learned from the 9/11 Attack on the Pentagon" (conference report, Arlington County, 2003), 27, https://icma.org/sites/default/files/4272_.pdf.

[88] Titan Systems Corporation, "Arlington County: After-Action Report on the Response to the September 11 Terrorist Attack on the Pentagon" (after-action report, Arlington County, 2002), http://www.floridadisaster.org/publications/Arl_Co_AAR.pdf.

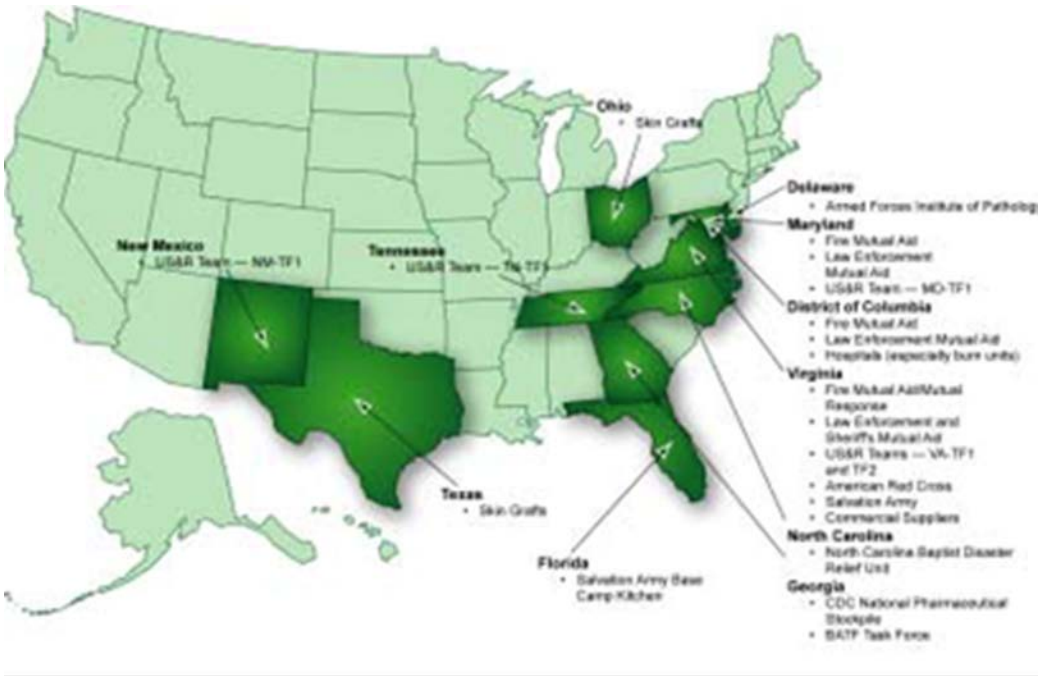

Figure 14. Map of Resources that Responded to the Pentagon Attack on 9/11[89]

3. No Clear Picture on How Many Gaps Have Been Addressed

No national system exists to measure how many gaps remain in the JCTAWS and IEMC participants' jurisdictions. Eighty percent of survey participants stated that they were addressing gaps, but could not articulate how many or which gaps had been addressed. Further, there is not a national system to highlight, champion, and share best practices from agencies and jurisdictions that have successfully developed policies, plans, and exercises to address the gaps. Perhaps one major barrier is the sharing and distribution of JCTAWS and IEMC information. Albeit sensitive, analysis of gaps and best practices can be shared nationwide at the unclassified level without specific geographical identifiers. This could benefit domestic agencies that do not meet the JCTAWS or IEMC criteria.

[89] Source: Titan Systems Corperation, A-47.

4. No CCA National Strategy

There is no national domestic strategy to prepare for or respond to a CCA. Unless state and local first responders attend JCTAWS or IEMC, then the only generic guidance for overall preparedness resides within federal documents such as the NPS, NPR, and specifically, the NPG. However, these federal documents are limited, and unlike the JCTAWS or IEMC summary reports, they do not provide a pathway or strategy that state and local entities can translate into action. The NPG and the NPR are structured by the five core mission areas (prevention, protection, response, mitigation, and recovery). In theory, once the tenets of these mission areas are achieved, agencies will have met the preparedness goal. However, attaining success at the state and local level is not an easy task, especially if the goal is to become "a secure and resilient Nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk.[90] Nevertheless, the trifecta of concern is a lack of clear and identifiable national-level CCA policy, declined federal funding, and the fact that CCAs are treated as a line item rather than an emerging and unfamiliar threat.

5. First Responders Are Adapting

The lack of national guidance and policy to prepare for a CCA may have implications that have not been assessed at the federal level, nor perhaps recognized at the state and local levels. To be sure, the previous graphs in Chapter III represent responders' challenge to attain proficiency in one core mission area, not to mention two or more, as would be necessary in a CCA. From the first responder perspective, supported by the research conducted for this thesis, two important findings emerge.

First: First responders, namely law enforcement officials and firefighters/paramedics, are still adapting to the reality that active-shooter incidents are occurring more often and that traditional tactics (i.e., firefighters stage and wait) are

[90] DHS, *National Preparedness Report*, 1.

outdated.[91] For example, according to the FBI, the number of active-shooter occurrences has increased from seventeen incidents in 2013 to twenty in 2014, 2015, and 2016.[92] A previous FBI report indicates that an average of six active-shooter events occurred between 2000 and 2006, whereas an average of sixteen active-shooter incidents occurred between 2008 and 2012.[93] Therefore, from a capability outlook, modifying policy to address this threat is more necessary—because it is more likely—than modifying policy to address a potential CCA. This includes the insertion of the Rescue Task Force model, in which both law enforcement and fire and rescue personnel enter a hostile area to triage victims. In 2012, the Rescue Task Force tactic was not commonplace, and was not even discussed as an option.[94] The change in the national discussion, local policy, public safety culture, and mission were a product of almost two decades of significant domestic active-shooter events.

Second: Given this shift in the first responder mission that ultimately addresses a high-frequency, high-risk event, first responders across the nation are producing results in active shooter policy and mission modification. Specific examples include Fairfax County, Virginia's, Active Threat Joint Operations Guide, Arlington County, Virginia's, High Threat Operations Guide, and Houston, Texas' cross-trained strike teams.[95] However, the implication is clear from the online survey: when participants were surveyed about JCTAWS, IEMC, and CCA preparedness, responses included reference to active-shooter and Rescue Task Force training rather than to a multi-site, multi-jurisdictional attack. This implies that active-shooter training may take precedence over

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[91] Michael Marino et al., "To Save Lives and Property: High Threat Response," *Homeland Security Affairs* XI (2015), http://search.proquest.com/openview/59c10615170ebaa4dd95ad312309910e/1?pq-origsite=gscholar&cbl=1336360.

[92] "2000 to 2016 Active Shooter Incidents," FBI, accessed October 11, 2017, https://www.fbi.gov/file-repository/activeshooter_incidents_2001-2016.pdf/view.

[93] John Peterson Blair and Katherine W. Schweit, *A Study of Active Shooter Incidents in the United States, 2000–2013* (Washington, DC: Department of Justice, 2013).

[94] Marino et al., "To Save Lives and Property."

[95] Johnson, "Changing the Paradigm"; Marino et al., "To Save Lives and Property"; Cynthia M. Vargas, "Tactical Firefighter Teams: Pivoting toward the Fire Service's Evolving Homeland Security Mission" (master's thesis, Naval Postgraduate School, 2016).

CCA training because an active-shooter situation is a clear and present issue. Furthermore, active-shooter tactics were observed in both the Mumbai and Paris CCAs.

B. NATIONAL POLICY RECOMMENDATIONS

Three recommendations are provided that will help solve the issues identified in this research.

1. National High-Threat Incident Response Institution

There are many networks that already exist to further a specific state or local mission and to advocate for legislative change. Examples include the International Association of Fire Chiefs and the International Association of Chiefs of Police. However, a formal state and local network of multi-discipline first responders that focuses on evolving threats and national policy does not exist.[96] The nation would benefit from a common-ground network—a think-tank institution for emerging hazards and high-threat incident response strategy that enables all state and local first responders to implement change. The domestic high-threat incident response institution will provide first responders with rapid and emerging threat data, perhaps from terrorist incidents, scholarly research, and support for solutions to difficult problems.

The Combating Terrorism Center at West Point serves as a framework model for this recommendation. For example, the Center "conducts rigorous and policy relevant research that contributes to the academic body of knowledge and informs counterterrorism policy" and has also been instrumental in training the Fire Department of New York in counterterrorism leadership studies.[97] However, this level of objectivity is insufficient for all state and local first responders.

The development of such an institution would respond to a variety of findings in this research, including gaps in cross-discipline training, regional or mutual aid emergency plans, and preparedness best practices, and would provide agencies with a

[96] It should be noted that a related organization does exist, but it focuses on counterterrorism, which is not applicable to all first responders

[97] "Combating Terrorism Center at West Point," accessed October 11, 2017, https://ctc.usma.edu/.

roadmap for implementing and reaching preparedness benchmarks to meet NPG or other future guidance.

2. JCTAWS and IEMC Enhancements

NCTC and FEMA should consider two recommendations specific to these courses. First, an agency's participation in JCTAWS or IEMC should be considered step one in a three-step process. Upon completion, step two will include working directly with federal agencies to address gaps, secure funding, and develop a timeline of goals and measurable benchmarks to obtain baseline capabilities. This step may be ongoing over a period of years, yet it forges the collaboration and strengthens the guidance between NCTC or FEMA and the state or local jurisdiction. Step three involves sharing best practices—innovative ways to address a gap or implement a solution. NCTC and FEMA are in a leading position to connect participants, who would be otherwise unaware of other jurisdictions' participation.

Second, jurisdictions that do not meet the minimum requirement for either course, or do not have sufficient travel or training funds, should be afforded some opportunity to engage in collaboration with the JCTAWS or IEMC programs. For example, instead of a traditional delivery of JCTAWS or IEMC, state and local agencies or jurisdictions would benefit from a process that includes a self-assessment, a formal report on the findings and recommendations of the self-assessment by JCTAWS or IEMC staff, and a post-evaluation six months after the assessment, and again at one year after the assessment. This second recommendation should be considered a follow-up item from the first recommendation.

3. National Leadership Engagement

Lastly, change will be limited unless national, state, and local leadership; emergency service labor unions; and other first responder and private-sector coalitions unite. Discussion about CCAs must precede a CCA occurrence in our nation. First responders are not strangers to collaboration, but they often struggle to see unknowns through another lens. Glen Woodbury, director for the Center for Homeland Defense and Security, recognized this need in his 2004 thesis entitled "Recommendations for

Homeland Security Organizational Approaches at the State Government Level." In his summary of findings, Woodbury states:

> The multi-governmental battlefield for terrorism is broader and more complex than any other issue that has faced this nation since the civil war. The involvement and commitment of states, local jurisdictions and the private sector is critical to the success in this battle, and the leadership of state governments is not only required explicitly and implicitly, it is the only level in which the broadest interaction and facilitation of all partners can be effected.[98]

To be sure, CCAs are not just a federal, state, or local issue. No one government has the resources, time, money, capacity, or experience to develop the power for a domestic conversation or the results of multi-government collaboration. However, up to the point that national leadership really engages, this thesis and the findings within will remain relevant.

C. LIMITATIONS

The research conducted in this thesis appears to be the first of its kind for this topic. Inquiry into the wicked problem, domestic first responder experience, CCA programs and barriers, and related research and analysis is limited by a dearth of credible and fundamental information. Although a simple Google search of "complex coordinated attack" yields over one million results, scholarly research and data are scarce. Nevertheless, appreciative inquiry into current federal preparedness documents has aided in the discovery of both challenges and opportunities. A key limitation to this research, however, is the lack of both strategy and expected outcomes for CCA preparedness, which remains unbalanced and unmeasured, and lacks maturity. The success of JCTAWS and IEMC is limited to the availability of federal tax dollars and the support and attendance of state and local agencies. Further, the availability of JCTAWS and IEMC is limited to jurisdictions with a population of 100,000 or higher.[99] Federal agencies should consider the second recommendation (from the previous section) in order to expose

[98] Glen L. Woodbury, "Recommendations for Homeland Security Organizational Approaches at the State Government Level" (master's thesis, Naval Postgraduate School, 2004), 3, http://calhoun.nps.edu/handle/10945/1488.

[99] FEMA, "Course: E/L0912."

jurisdictions to these programs and increase national collaboration on emerging threats. Therefore, until the United States experiences a CCA, or we are able to successfully put into place effective and measurable CCA preparedness programs, our ability to adapt our response capabilities a horrific CCA scenario is restricted by imagination.

D. AREAS OF FUTURE STUDY AND RESEARCH

The topic of CCAs is wide open for scholars and researchers; this thesis is the first step in understanding and preparing for an emerging threat that is effective and destructive. To that end, future research should be conducted to determine the feasibility for a model domestic CCA policy. The findings and gaps discussed in Chapter II highlight the need to develop a pathway from gap identification to gap mitigation.

Further study is needed on best practices for state and local CCA preparedness. More specifically, scholars should expand on the survey in Chapter III in order to capture additional data on what exactly qualifies as a best practice, how a best practice is implemented, and how to address new barriers or challenges that state and local agencies or jurisdictions may face during implementation or policy development.

Finally, the nation would benefit from analysis of historic CCAs over the past ten years. Specifically, the analysis should focus on first responders' pre-attack preparation and how it affected the outcome of the incident. Policy and emergency operations plans should be scrutinized not only to assess modern challenges, such as cross-discipline training and functional training exercises, but to assess effectiveness of the policy or plan during the incident. Perhaps a future researcher could also conduct comparative analysis in order to extract positive and fresh ideas.

E. CONCLUSION

Only time will tell when the first CCA will occur on American soil. When it does occur, the attack cycle will likely commence in a crowded place filled with innocent civilians, as it has so many times before. Attackers will use any means necessary to carry out the plan until they are stopped. In the wake of this attack, first responders will still respond and attempt to mitigate any familiar and unfamiliar emergencies, even in hostile

environments, but at an increased personal risk if they are not adequately prepared. These were the actions of so many global first responders, and these will be the same actions in the coming years.

The United States and its first responder community have been presented with a unique challenge: prepare for or ignore the CCA threat. Acting on the former will not be an easy task; change involves a culture adjustment, policy development, leadership commitment, and a general understanding of the CCA narrative. This thesis has identified numerous themes that can help address the current mode of operation. One thing is sure: the current preparedness model is not working to its full potential. Missed opportunities at the federal, state, and local level that are not fully addressed now will likely result in a regurgitation of the same after-action findings. Look no further than the 9/11 Commission Report, the Gilmore Commission Report, and others that speak about preparedness, collaboration, and complacency over decades.

This thesis and its hundreds of hours of research, analysis, reading, and discussions should not sit idle. We have two choices: move forward and continue the route of scholarly research and dialogue, or sit and wait. The expectation of the nation's first responders, and the citizens they have vowed to serve, is that we evolve, adapt, and move forward in the face of emerging threats. Only certain powers have the ability to make this happen. Let's move forward.

APPENDIX

Table 1. Example JCTAWS/IEMC Capability Gap Matrix[100]

#	Gap	Core Capabilities	Mitigation Strategies	Capability Elements	Resources
20	There are gaps in mass-casualty plans regarding casualty transport and resource requests.	- Public Health and Medical Services - Critical Transportation	- Review current mass-casualty plans to ensure that they include transport coordination, preplanned transport corridors, and clear direction on how to access National Guard and other assets.	- Plans	- The CDC's In a Moment's Notice: Surge Capacity for Terrorist Bombings - CDC Interim Planning Guidance for Preparedness and Response to a Mass Casualty Event Resulting from Terrorist Use of Explosives
21	There is no coordinated plan for family reunification.	- Public Health and Medical Services - Mass Care Services - Planning	- Form a regional working group to develop a family reunification plan that includes coordination between mass care service providers, hospitals, the Medical Examiner's Office, and all levels of law enforcement.	Plans	- Post-Disaster Reunification of Children (FEMA)
22	Hospitals may have limited ability to lock down, particularly without law enforcement assets.	- Public Health and Medical Services - On-Scene Security and Protection	- Develop individual institution plans for rapid facility lockdown using only internal assets, such as facilities management personnel. - Conduct training for identified personnel to perform new facility security tasks.	- Equipment - Plans - Training	- Hospital Code Silver Activation – Active Shooter Planning Checklist

Table 2. Mission Areas and Core Capabilities[101]

Core Capabilities	Prevention	Protection	Mitigation	Response	Recovery
Planning	●	●	●	●	●
Public Information and Warning	●	●	●	●	●
Operational Coordination	●	●	●	●	●
Intelligence and Information Sharing	●	●			
Interdiction and Disruption	●	●			
Screening, Search, and Detection	●	●			
Forensics and Attribution	●				
Access Control and Identity Verification		●			
Cybersecurity		●			
Physical Protective Measures		●			
Risk Management for Protection Programs and Activities		●			
Supply Chain Integrity and Security		●			
Community Resilience			●		
Long-term Vulnerability Reduction			●		
Risk and Disaster Resilience Assessment			●		
Threats and Hazards Identification			●		

Core Capabilities	Prevention	Protection	Mitigation	Response	Recovery
Critical Transportation				●	
Environmental Response/Health and Safety				●	
Fatality Management Services				●	
Fire Management and Suppression				●	
Logistics and Supply Chain Management				●	
Mass Care Services				●	
Mass Search and Rescue Operations				●	
On-scene Security, Protection, and Law Enforcement				●	
Operational Communications				●	
Public Health, Healthcare, and Emergency Medical Services				●	
Situational Assessment				●	
Infrastructure Systems				●	●
Economic Recovery					●
Health and Social Services					●
Housing					●
Natural and Cultural Resources					●

[100] Example from FEMA report (source information redacted to make sample publicly releasable).

[101] Source: DHS, *National Preparedness Report*.

Table 3. IEMC Core Assessment Criteria[102]

Core Assessment Criteria

Population	
5	1,000,000 +
4	500-999,000
3	300-499,000
2	200-299,000
1	100-199,000

Threat	
5-1	Restricted assessment

National Events	
5	SEAR 1, NSSE
4	SEAR 2
3	SEAR 3
2	Special Events 50,000+ Attendance
1	Special Events 25,000+ Attendance

Population Density/Distribution	
5	Major Metro Area (City over 100,000; and/or population density greater than 2,000/sq. mi.)
4	Metro Area (City over 75,000; and/or population density greater than 1,000/sq. mi.)
3	Urbanized Area (Population of over 50,000)
2	Suburban Area (Population of near 50,000)
1	Rural Area (Population less than 50,000)

Amplification Factors

+3	Major critical infrastructure considerations or specialized focus (i.e. major transportation hub, port, international airport, financial services center, telecommunications center, IT center)
+3	Support infrastructure (i.e. geographic isolation, crossing state borders)
+2	Recent relevant incidents (i.e. major non-natural disaster response, disrupted incident)
+2	Concentration of universities

[102] Source: FEMA, "Course: E/L0912."

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