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Emergency Management Standards for NCAA Division I-A Football Stadia

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2012

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Dissertation Submitted in Partial Fulfillment

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Abstract

In the best of times, emergency managers of athletic event venues struggle with the responsibilities of venue security. The possibility of terrorist threats exacerbates the situation, especially when security threats can involve a critical mass of spectators at an event. Emergency managers at the National Collegiate Athletic Association (NCAA) athletic venues were the focus of this study. The overarching research question examined whether the minimum core competencies and qualifications for NCAA emergency managers were perceived by the same managers as being sufficient and in alignment with the work that is expected of the position. Research questions were designed to study what practices emergency managers in the field deemed as the most important minimum work qualifications necessary to competently perform their duties. A quantitative survey instrument was administered to 120 Division I-A football stadium emergency managers. A 42 percent response rate was obtained. Data were collected and analyzed using a 3-round Delphi technique. Data were solicited by an online survey for the first 2 rounds, and either online or by mail for the final round. A total of 50 core competencies were identified with a high rate of agreement (96 percent) among participants. Findings indicate that command level emergency management related experience is vitally important with developing the most competent stadium emergency manager, while advanced educational training opportunities available through the Department of Homeland Security and National Center for Sports Security ranked low. Positive social change implications stemming from this study include a greater understanding of skills required to secure sporting venues, thereby potentially increasing the level of safety to spectators and reducing the possibility of terroristic threat.

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Dedication

This dissertation is dedicated to all individuals who have taken part in making the United States more secure since the terrorist attacks that it endured on September 11, 2001. Without their dedication and resolve to secure the country that we have the privilege to call home, ultimately, no sports would exist for us all to enjoy.

This work is also dedicated to the foundation that holds me up, my beautiful wife Jennifer. She is without a doubt the person that I always know will be right by my side no matter where our future endeavors take us. Without her I know I would have never reached this point in my academic career, and she is the reason that I know I will finish any goal I set for myself and continue to serve my country in another capacity. This is only the beginning; she knows I will continue to do more and that I can count on her to continue being supportive.

I cannot forget the countless family members along the way who have been there to support me along this very long journey! Words cannot express the sincere gratitude I have for my parents/step parents and to my brother who never lost faith in my abilities. They always knew that I could accomplish more; and above all held me to those standards.

To the best grandparents that I could have ever asked for! I know they are looking down upon me with such pride that they are grinning from ear to ear. For me this entire process was worth the effort just to know how proud I would have made them.

To my two stepsons, Spencer and Dylan, for the countless hours that they know I have spent achieving this little goal of mine; they now have their stepfather back!

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Trying to acknowledge everyone that has had an influence on my academic career is something that just cannot be completed, I have so many people to thank that I don't even know where to begin.

Words cannot express the sincere gratitude that I feel toward the countless number of individuals I have met throughout my Air Force career who have mentored and guided me along the way. We have a very tough, demanding, and sometimes thankless job, yet somehow we push forward and do not let that stop us from completing whatever mission our country has asked us to do.

Thank you so much. All of you!

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Chapter 1: Introduction to the Study

Security to counteract and react to terrorist threats at sporting venues in the United States has become an increasingly pertinent topic in the global war against terror. In July 2002, the Federal Bureau of Investigation (FBI) warned that people with links to terrorist groups were discovered downloading stadium images (Estell, 2002, p. 8). In March of 2005, the Department of Homeland Security (DHS) identified a truck bombing of a sports arena as one of the most devastating possible emergency scenarios. In that same year, the DHS developed the National Planning Scenarios (NPS), a document specifically addressing the potential impact of a biological attack on a sports arena and revealing that the spreading of pneumonic plague in the bathrooms of a sports arena might potentially kill 2,500 people (Hall, Marciani, Cooper, & Phillips, 2010).

Technology has played a key role in training and preparing security managers and will continue to do so in the foreseeable future. To meet increased demand for technology and training, the National Center for Spectator Sports Security Management (now known as NCS4) has been established. This center is the first of its kind, a world-wide interdisciplinary institute focused on research, education, and outreach efforts in sporting event security. Not garnering much attention is the increased use of emergency management simulation software to calculate the best viable option to evacuate a stadium. As shown in the construction of two recent billion dollar stadia (for the New York Yankees and the Dallas Cowboys), technology and emergency management were at the forefront of the developers' priorities in the building process (Francis, 2009).

The foundation of emergency management involves a manager's ability to successfully minimize the loss of life and destruction of property. The stadium

emergency manager's role is to adjust to any one of the four phases of emergency management: mitigation, preparedness, response, and recovery. Experiences from countless previous emergency situations have helped the current generation [post 9/11 is understood in your mention of "the current generation"] of emergency managers mitigate a majority of situations by implementing additional security measures. In this phase, emergency managers must continue to learn from past incidents and make sure their support staff is trained to the highest level deemed essential. The response phase for emergency managers is of utmost importance; it is the lifeblood of the emergency management position, for it is not a question of *if* an emergency situation is going to happen but more of *when* is it going to happen. The final phase of emergency management involves the ability of emergency managers to spring back from any given scenario with which the stadium could have coped. From that instance, they must learn how to move back into the mitigation and preparedness phase of emergency management.

With the imminent threat of a terrorist attack, stadium emergency managers are being counted on more than ever to safeguard the nation's sporting venues. To understand the importance of security management, one can try to visualize the panic and pandemonium that would follow if a terrorist attack were to take place at a U.S. sporting venue. With the potential setbacks from loss of fan confidence, the potential loss of human lives as well as great financial losses, stadium emergency managers are placed in a "must win" situation to outpace those individuals looking for the smallest breach in stadium security.

Problem Statement

Stadia security managers must be prepared to address a variety of potential emergencies. The security issues that stadium emergency managers are addressing daily (e.g., inclement weather, alcohol problems, and crowd management issues) are exacerbated by the possibility of a terrorist attack (Fried, 2005). Thus, spectator security is the most important priority for stadium emergency managers. Nevertheless, Baker, Connaughton, Zhang, and Spengler (2007) argued that current research indicates a lack of training, education, and overall lack of planning capabilities for key personnel responsible for emergency management at sporting venues. These findings were amplified by research conducted by Cunningham (2007). Cunningham found that 62% of assistant athletic directors for facilities at Division I-A football schools reported having no formal training, education, or certifications in event emergency management.

Previous studies regarding stadium emergency management, such as Hall's (2006) and Cunningham's (2007), focused on security measures, ignoring the management role and the qualifications needed for stadium emergency managers. According to the National Center for Sports Security (n.d.), a gap currently exists in the industry in meeting minimum training and education needs. Even with the abundance of current research pointing out problems in current practices of stadium emergency management, one issue has become especially transparent. That issue involves the need for an individual in a leadership position who is qualified to handle any situation and can lead the staff through all phases of stadium emergency management preplanning, the event itself, and the afteraction experience.

Thus, it is apparent that future sports managers toned to be equipped with adequate training in facility security operations. Furthermore, a certification program should be developed for all intercollegiate athletic facility managers and their security support staff who work athletic events. To ensure access to timely and accurate security information, the sports managers will need to construct an information sharing and analysis center for intercollegiate athletic staffs. Security training has emerged as a critical requirement and should be provided to ushers, vendors, and volunteers in the following areas: threat assessment, inspection procedures, credential recognition, and security awareness (Hall et al., 2010).

There are 120 Division I-A football stadia with a large variance in stadium capacities; for example, of these stadia, the University of Michigan stadium (capacity 109,901) is the largest and the Idaho University stadium (capacity 15,820) is the smallest. Variations exist in training policy and procedures as well as qualifications magnified by the sheer diversity in one region of athletics compared to another; thus, detailed information is needed on the current qualifications for holding the stadium emergency manager position.

Purpose of the Study

The purpose of this study was to formulate and explore baseline qualification standards needed for current and future stadia emergency managers. The focus of the study was on Division I-A College football emergency managers who are most likely to be the possible prime targets of terrorists. These standards are recommended by those who currently hold that position at the Division I-A university level. Since the terrorist attacks on 9/11, studies have addressed topics as security manager capabilities at the

collegiate level and standards for effective security management at university sport venues. However, minimal research has been conducted on the qualifications needed for present and future emergency managers within the NCAA Division I-A level.

Nature of the Study

Updated baseline qualification standards are needed for Division I-A stadium emergency managers to fill the training and education gap in this growing and increasingly popular career field. Explanation of this project's three-round Delphi study using a quantitative survey instrument is detailed in Chapter 3. The instrument was administered to a selected sample. Attached to the survey was a cover letter outlining the study objectives with a confidentiality guarantee for the expert panel. Furthermore, anonymity was assured throughout and after the study. Strict adherence to the Institutional Review Board's Human Subjects Guidelines was also guaranteed. Eight subject matter experts filling the university stadium emergency manager role volunteered to serve on the expert panel and were asked to answer the following openended question: What baseline qualification standards are needed for NCAA Division I-A stadium emergency managers? The expert panel was then asked to compile their initial list of 25 baseline qualifications.

Research Questions

The baseline qualification standards needed to hold the position of an NCAA Division I-A football emergency manager were examined for this study. The research questions were as follows:

1. What baseline qualification standards are needed for NCAA Division I-A stadium emergency managers?

2. What is the perceived level of importance for the baseline qualification standards?

H_0: Significant differences will not exist regarding the perceived level of importance of qualifications from individuals filling the role of university stadium emergency manager.

H_1: Significant differences will exist regarding the perceived level of importance of qualifications from individuals filling the role of university stadium emergency manager.

Conceptual Framework

The conceptual framework used in this study rests on punctuated equilibrium. To answer the how and why questions of public policy change, one must look at the reason for change in the first place. Public policy scholars strive for clarification and understanding of the reasons informing policy change. A policy image is defined as the public perception of a policy problem. Policy images often change in the aftermath of a "crisis" or following the accumulation of new knowledge (Camlibel, 2010). The view of these policy images can be transformed after a crisis when the mass media set the tone on a particular issue (Camlibel, 2010).

Punctuated equilibrium was chosen as the conceptual framework for this study because of the societal changes that resulted from the terrorist attacks of September 11, 2001. In using the punctuated-equilibrium theory, researchers seek to explain a simple observation—that political processes are generally characterized by stability and incrementalism. Occasionally, they produce large-scale departures from the past (True, Jones, & Baumgartner, 2006). Because most policy models are meant to explain one of

the two policy elements of stability and change, punctuated equilibrium goes much further than what can be explained by other theories and has been found to be successful at explaining either of the two policy elements.

Cobb and Elder (1972) first described unexpected events as "triggering devices" that can raise the importance of issues and place them on a political agenda. Complex interactive political systems do not react slowly and automatically to changing perceptions or conditions; rather, it takes increasing pressure and sometimes a crisis atmosphere to dislodge established ways of thinking about policies (Jones, Baumgartner, & True, 1998, p. 2).

September 11, 2001, was the focal point of this study for policy changes involving stadium emergency managers. It is also important to look at other events that have led to drastic policy changes. These “trigger points” are highlighted in Chapter 2 and show the need for policy change within the stadium emergency manager protocols. The triggering events, according to Baumgartner and Jones (2009), are significant determinants for changing the media tone of policy image and feedback. One example of a terrorist-related incident at a college football event occurred in October 2005. A University of Oklahoma student suicide bomber detonated his device outside an 84,000 seat stadium (Hagmann, 2005). This incident had a ripple effect, temporarily featuring the University of Oklahoma’s athletic security department prominently in the national media.

Definition of Terms

Assessment: “The process of acquiring, collecting, processing, examining, analyzing, evaluating, monitoring, and interpreting the data, information, evidence,

objects, measurements, images, sound, etc., whether tangible or intangible, to provide a basis for decision making" (Chatham Emergency Management Agency; CEMA, 2010, p. ix).

Critical infrastructure: "Assets, systems, and networks, whether physical or virtual, so vital to the United States that the incapacitation or destruction of such assets, systems, or networks would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters" (CEMA, 2010, p. ix).

Crowd control: "Includes all measures taken once crowds are beginning to or have gotten out of control: arrests, fights, ejections, etc." (Berlonghi, 1990, p. 157).

Crowd management: "Includes all aspects of managing the people at an event, not only preventing violence like forcing disruptive people to leave but activities like tickets, law enforcement, and creating an appropriate atmosphere for attendees" (Antee & Swinburn, 1990, p. 16).

Emergency Management/Response Personnel: **"**Includes Federal, State, territorial, tribal, sub-state regional, and local governments, NGOs, private sector-organizations, critical infrastructure owners and operators, and all other organizations and individuals who assume an emergency management role (Also known as emergency responder.)" (CEMA, 2010, p. xii).

Evacuation: "Organized, phased, and supervised withdrawal, dispersal, or removal of civilians from dangerous or potentially dangerous areas, and their reception of care in safe areas" (CEMA, 2010, p. xiii).

Mitigation: "Activities providing a critical foundation in the effort to reduce the loss of life and property from natural or manmade disasters by avoiding or lessening the impact of a disaster and providing value to the public by creating safer communities" (CEMA, 2010, p. xvi).

NCAA Division I-A Football: "A classification for intercollegiate football, which the member institution can give a maximum 85 football scholarships, averages attendance of at least 17,000 fans for football games and plays in a stadium that seats at least 30,000 patrons. Examples of I-A member institutions include: Michigan State University, Oklahoma State, Rutgers University, University of Arizona, University of Wisconsin, University of Texas, and Florida State University" (NCAA, 2004, p. 504).

National Incident Management System: "A set of principles that provides a systematic, proactive approach guiding government agencies at all levels, nongovernmental organizations, and the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents" (CEMA, 2010, p. xvi).

National Response Framework: A guide to how the nation conducts all-hazards response (CEMA, 2010, p. xvii).

Recovery: **"**The development, coordination, and execution of service and site-restoration plans for affected communities and the reconstitution of government operations and services" (CEMA, 2010, p. xviii).

Response: "Activities that address the short-term, direct effects of an incident which includes immediate actions to save lives, to protect property, and to meet basic human needs" (CEMA, 2010, p. xix).

Terrorism: As defined in the Homeland Security Act of 2002, activity that "involves an act that is dangerous to human life or potentially destructive of critical infrastructure or key resources … [or] to affect the conduct of a government by mass destruction, assassination, or kidnapping" (CEMA, 2010, p. xx).

Threat: "Natural or manmade occurrence, individual, entity, or action that has or indicates the potential to harm life, information, operations, the environment, or property" (CEMA, 2010, p. xxi).

Assumptions

Because the individuals answering the survey were decision makers for university stadium emergency management, certain assumptions were made. First, it was assumed that all individuals answering the survey were honest about the requirements necessary to perform their daily duties and additional training to improve carrying out those duties. Furthermore, it was assumed that the individuals answering the survey were responsible for the day-to-day operations of stadium emergency management at their universities.

Limitations

The limitations of this study included but were not limited to the following factors:

1. Participants had to have been completely honest while answering questions about the qualification requirements for their current duties within the organization. Failure to do so would limit the validity and reliability of the qualifications needed.
2. Participants could have been inclined to either overqualify or underqualify the baseline qualifications needed for their current duties within the stadium.

3. The population studies involved any number of position titles responsible for the emergency management program within all 120 Division I-A college football programs.
4. Previous data on baseline requirements are lacking for stadium emergency managers prior to and post/11.
5. This study focused on those filling the role of stadium emergency manager for Division I-A schools.

Delimitations

In this study, I focused on employed individuals responsible for emergency management at NCAA Division I-A college football stadia. The participants in the study were drawn from a purposeful sampling list of those who at the time of the study filled the role of university stadium emergency manager, including those in local law enforcement, an athletic administrator, or a dedicated individual serving in a full time stadium emergency manager or university emergency management role.

Significance of the Study

The guidelines that can be formulated from the findings of this study can aid the hiring process so that the stadium manager is the most qualified person available for the position. Public policy aims to provide current research data on training programs or techniques that should be required for this position. Having stadium emergency management experts from the field compile a list of standards on the qualifications and actions necessary to do their job is not only beneficial to the career field but also to sports fans around the world. With the potential for devastating loss of human life as well as the monetary impacts of a mishandled emergency situation, academic institutions ultimately

have the most to gain. Security for the patrons at these massive venues should be a management priority, for the fans are ultimately the base of the entire sports industry.

Expected Social Change

Regarding the imminent threat of countless emergency incidents that can take place on any given Saturday at any of the 120 NCAA Division I-A football stadia, it is imperative to have the most qualified individuals in the stadium emergency management positions. The findings from this study can be significant in setting a baseline qualification standard for the position generated by those currently holding that position, which should increase understanding of how their duties should be performed. These standards provide an opportunity to make informed recommendations for baseline qualifications or improvements within the profession and subsequently the stadium emergency management system. This study contributes to positive social change by providing research-based findings that can enhance the stadium manager hiring process, set standards for the position, and ensure spectator security. The preservation of life and property in the event of a disaster is the primary goal of the research.

Summary and Transition

Chapter 1 set the background for the growing need for well-coordinated emergency management at sporting venues throughout the United States. The NCAA Division I-A football stadia are the focus of this study. The purpose of this study was to formulate and explore baseline qualification standards needed for current and future stadia emergency managers, who are likely targets of terrorists. Associated literature surrounding emergency management, punctuated equilibrium, and simulation is reviewed in Chapter 2. Chapter 3 details the research methodology for this study, Chapter 4

reports the results, and Chapter 5 interprets the data, and gives conclusions and recommendations related to emergency management at some of the largest stadia in the United States.

Chapter 2: Literature Review

The literature review covers studies that focus on the need for emergency management, emergency management as a profession, the technology currently available to emergency management, and the most recent guidelines and best practices that emergency managers have at their disposal. Recent developments in the tools and technology that emergency managers have at their disposal have resulted in redefining their roles, policies, and procedures in addition to current guidance for the stadium emergency manager. The literature supports the research question involving emergency management as a profession and influence of the latest technology to enhance the ability to produce a safe and sound contingency emergency management plan.

The literature review is categorized into sections starting with punctuated equilibrium, the need for an experienced emergency manager, emergency management, and technology. A range of databases were searched including Academic Search Premier, Google Scholar, Policyfile, ProQuest, and SocINDEX to ensure a thorough review of the literature. Specific industry journals such as the *Journal of Homeland Security*, *Journal of Emergency Management*, and *Hazard Technology* were also searched. An initial search of the literature focused on the keywords of *emergency manager* and *stadium security manager*. After the initial search of the databases, primary keywords were used such as *venue management*, *security manager*, *security management incidents*, *technology*, *risk management*, *qualifications*, *history*, *NCAA*, *Division I-A*, *professional sports*, *risk-management*, *emergency management*, *crisis management*, *disaster manager*, *standard*, *profession*, *crisis manager*, and *punctuated equilibrium* to find related journal articles mentioning qualifications in emergency management. Assistance was sought and

received from the Walden University Library and the DHS, Federal Emergency Management Agency (FEMA), and Emergency Management Institute (EMI) to identify and obtain related literature.

Relevance of the Literature to the Research Question

To lead effectively and efficiently, emergency management programs are based on the following four phases of emergency management:

- Mitigation: The application of measures that will either prevent the onset of a disaster or reduce the impacts should one occur.
- Preparedness: Preparedness activities prepare the community to respond when a disaster does occur.
- Response: The employment of resources and emergency procedures as guided by plans to preserve life, property, the environment, and the social, economic, and political structure of the community during the onset, impact, and immediate restoration of critical services in the aftermath of a disaster.
- Recovery: Actions taken in the long term after the immediate impact of the disaster has passed to stabilize a community and to restore some semblance of normalcy. (CEMA, 2010, pp. xvi-xix)

To obtain baseline qualification standards for stadium emergency managers was the ultimate goal of the study. To develop the most qualified stadium emergency manager, the individual holding that position must be a master of all facets of the four phases of emergency management. The individual holding this position needs to be able to implement a joint plan formulated by several different agencies and to recognize that no plan will be a success without the ability to use all of the resources available.

The most basic concept of the four phases of emergency management is based on mitigating a threat to the lowest level possible. Following this concept, stadium emergency managers will use all available tools to mitigate the threat in the university stadium. Examples of threat mitigation can be as simple as erecting concrete barriers to keep vehicles farther from the stadium or as drastic as the Yale University no drinking policy and limiting "tailgating" time to end at halftime (Wieberg, 2005).

Punctuated Equilibrium

Punctuated equilibrium theory began with a long-term analysis of U.S. national policymaking, but its features have been useful in understanding general public policymaking. The theory focuses on the interaction of political institutions, interest mobilizations, and bounded rational decision making (True et al., 2006). The term *punctuated equilibrium* was proposed by paleontologists Niles Eldredge and Stephen Jay Gould to describe gaps in the evolutionary record (Baumgartner & Jones, 2009). Punctuated equilibrium theory in public policy was extracted from biological punctuated equilibrium theory. It is based on the determination that such policies may go back and forth between a condition of stasis to that of strong punctuation (Givel, 2010). Punctuated equilibrium is a "novel interpretation for the oldest and most robust of paleontological observations: the geologically instantaneous origination and subsequent stability (often for millions of years) of paleontological 'morphospecies'" (Gould & Eldredge, 1993, p. 223). The punctuated equilibrium paradigm suggests that evolutionary change occurs in periodic bursts, rather than in gradual, incremental steps (Gersick, 1991). The impetus for punctuated equilibrium theory in evolutionary biology occurred in 1954, when Ernst Mayr theorized that biological evolution does not occur gradually (Mayr, 1954).

Biological punctuated change, according to Gould and Eldredge (1993), is based on macroevolutionary genetic factors and environmental factors. A policy change, according to Baumgartner and Jones (2009), is based on a variety of outside and often complex disturbances that punctuate established policy monopolies (see Table 1). Moreover, punctuated equilibrium tends to be saltational or near saltational with "explosive" and "dramatic" policy changes (Givel, 2010).

Table 1

Comparison of the Primary Theoretical Characteristics of Punctuated Equilibrium in Public Policy and Biology

	Public Policy	Biology
Bases for Change	Disturbance and disruption of equilibrium of policy monopolies	Macro phylogenetic drift, speciation, species selection
Time Frame of Change	Saltational or very short-term defined as dramatic or explosive	Over thousands of years but quicker than gradual change; not saltational
Outside Disturbances that Punctuate Equilibrium	Interest groups, political parties, elected officials, legislative committees, crises, wars, new technologies, scientific changes, radical economic change, and reformist mobilizations	Genetic variability in geographically isolated populations adapting to new environmental conditions
Factors Resisting Change	Political entrepreneurs, courts and rule of law, policy monopolies, bounded rationality, acceptance of new policy ideas tied to a public policy, fragmented political system	Lack of genetic variability in a population and stable environmental conditions
Venues for Change	Various governmental jurisdictions	Geographical and ecological venues
Levels of Analysis	Between and amongst levels of government	Genetics and higher levels of organisms
Patterns of Change	According to Baumgartner and Jones, if measured by tone and political communications, alternates between stability and punctuation. According to other recent research, if measured by policy outputs, pluralistic policy output patterns occur with no change, limited change, and punctuated change	Evolutionary pluralism where gradual and punctuated change both occur

Note. Adapted from *Agendas and Instability in American Politics* (2nd ed.) by F. R. Baumgartner and B. D. Jones, 2009, Illinois: The University of Chicago Press.

The current punctuated equilibrium literature attributed to Baumgartner and Jones (2009) seems appropriate as the basis of this study. Occasionally, public policy change can occur either "sharply," "explosively," and in a "short period" due to an outside exogenous shock (such as a trigger event) followed again by a new pattern of gradual and incremental policy change (Baumgartner, 2006; Baumgartner & Jones, 2009). Shortly after the terrorist attacks on September 11, 2001, the general tone in the United States was a positive feedback to whatever this nation could do to prevent 9/11a similar event, and with that came policy change at a very rapid pace.

In striving toward system equilibrium, decision making is often based on limited and noncomprehensive information (Baumgartner & Jones, 2009). Bounded rationality allows for a sudden reversal of former policy positions that result in significant policy change (Baumgartner & Jones, 2009). September 11, 2001 can be considered the ultimate trigger event in our nation's short history that set off an explosion of policy reform in the years following those catastrophic events. In a post 9/11 environment, our security policy system has been in state of disequilibrium. When a system is in extreme disequilibrium, a punctuated policy reform, hysteresis, or even a political revolution can occur (Baumgartner & Jones, 2009; Foran, 1993; Goldstone, 2001). Baumgartner and Jones (2009) also noted that such a transformation is based on a variety of outside and often complex disturbances that punctuate established policy monopolies. Security in a post 9/11 environment has been considered to be a daunting task for the United States. Anything less than total protection of its citizens can be considered a political failure. Baumgartner's (2006) definition of punctuated equilibrium theory in public policy is based on a mechanistic and self-correcting positive and negative feedback process that

results in policy equilibrium or disequilibrium. Consequently, numerous outside punctuations have followed in the past decade since September 11, 2001, minimizing the collective effort put forth by the government for stable security policy reform.

Without taking into account the numerous security incidents the United States has faced since September 11, 2001, many factors are present that can hinder those same equilibrium periods. Some of these factors include courts that overrule reformist, radical policies such as significant changes in property rights; entrenched policy entrepreneurs; and group or individual resistance to new policy ideas (Baumgartner, 2006). At the same time, maintenance of the political status quo and relative policy equilibrium can occur by powerful policy monopolies and interests that employ lobbyists, policy specialists, lawyers, and public relations specialists (Givel & Glantz, 2001). According to Givel (2010), "many modern punctuated equilibrium theorists in public policy also focus on a social construction-oriented media analysis of the coverage of policy events in the policy process rather than what government ultimately does or does not do including court decisions, executive orders, or legislation" (p. 3).

Punctuated equilibrium has proved useful enough that scholars have employed it to understand a variety of policymaking situations in the United States and abroad, and robust enough to survive several rigorous quantitative and qualitative tests (True et al., 2006). A consideration often overlooked is that punctuated equilibrium has led to considerable discussion among public policy practitioners, which is important when addressing issues such as U.S. national security. Other factors illustrated by punctuated equilibrium policy theorists that can cause positive feedback and sharp policy change include: disruptive events caused by crises; new politicians or political parties in power;

wars; new technologies and scientific changes; radical economic change; and reformist mobilizations by interest groups opposed to policy monopolies (Baumgartner, 2006).

Many punctuated equilibrium scholars have assessed punctuated policy change based on language, "tone," and degree of media coverage in the political decisionmaking process. However, it can also be argued that punctuated equilibrium theory and analysis must occur with a focus on actual policy outputs (Baumgartner, 2006; Baumgartner & Jones, 2009). Following the 9/11events, the leaders of the United States had no choice but to follow the positive feedback that was entrenched in the minds of the American citizens. What had been done prior to the attacks was not working, which allowed the federal government to do whatever was needed to make sure that Americans never had to endure an attack of same magnitude as the one on September 11, 2001.

Gould and Eldredge's Punctuated Equilibrium Theory

According to Gould and Eldredge's theory, "Punctuated equilibrium addresses the origin and deployment of species in geological time" (Gould, 2007, p. 39). Punctuated equilibrium is likened by Gould (2007) to biological knowledge about the fossil record. However, Gould and Eldredge's theory could not be used to adequately comprehend that most species "appears with geological abruptness in the fossil record and then persists in stasis until their extinction" (Gould, 2007, p. 19). Punctuated equilibrium theory as posited by Baumgartner and Jones (2009) tends to be saltational or near saltational with "explosive" and "dramatic" policy changes. Punctuated equilibrium as defined by Gould and Eldredge is not saltational, but is slow change, that is, faster than gradual evolutionary change (Gould, 2007). Gould and Eldredge's early view of punctuated equilibrium was subsequently revised and replaced with evolutionary pluralism.

Evolutionary pluralism is the notion that evolutionary change in biology can be gradual or punctuated, but not saltational (Gould, 2007). Three components comprise Gould and Eldredge's punctuated equilibrium (Gould, 2007):

- *Stasis*, which is "not 'rock stability or utter invariance" (p. 40) but rather "effectively, no change accumulates at all" (p. 41).
- *Punctuation*, which must…be defined relative to the subsequent duration of the derived species in stasis" (p. 42).
- *Relative frequency*: "As the most important ground rule, the theory of punctuated equilibrium makes a claim about dominating pattern, or relative frequency, not just an assertion for the existence of a phenomenon" (p. 48).

Paradigm Change

As Kuhn (1996) argued, a paradigm (such as the punctuated equilibrium syllogism in public policy) is an accepted model or pattern. Paradigms are based on accepted scientific research and facts, can be predicted and most importantly, are able to resolve "residual ambiguities" (Kuhn, 1996). Ideally, a new scientific theory will develop when a significant anomaly is discovered, but this often occurs with substantial resistance (Kuhn, 1996). A paradigm that is in "crisis" is often reconstructed with new and usually simplified axioms and that the new paradigm normally solves the problems of the old paradigm (Kuhn, 1996). The basis in science to ascertain if an old paradigm in crisis is through scientific research engaged in "strong inference" that disproves all or parts of the old paradigm such as has occurred in recent research, finding no punctuations despite a concerted effort to alter public policy. In this manner, scientific theory and knowledge advances by testing null hypotheses (Platt, 1964).

Incrementalism

Incrementalism means that one policy choice has only slight differences from the previous one. No other alternative concept has arisen, so the model persists in the face of criticism theoretically, methodologically, and empirically (Jones & Baumgartner, 2004). The incremental model as a descriptive model of policy choice has been subject to much criticism on theoretical, methodological, and empirical grounds; profound criticisms that it did not survive (Jones & Baumgartner, 2004). An Achilles heel of the incremental model is that it does not show guidance at how decision makers are able to develop new guidance to follow. According to Jones and Baumgartner (2004), incrementalism in its purest form implies that decisions happen randomly in time. Because there is no real way to know how incremental adjustments are made, one can assume their randomness.

Incrementalism has been under fire regarding how far a policy change must go before it could qualify as "nonincremental." With incrementalism one could note that the policy change in question could have come over a longer period of time and could have been a normal distribution of policy change. If the policy change that occurred through a given time was not equally distributed, then incrementalism cannot be the right model for the decision process (Jones & Baumgartner, 2004).

A Delphi style research format was chosen for this study based on the theoretical foundation of punctuated equilibrium, for it is the current stadium emergency managers who will be the ones implementing policy changes. With punctuated equilibrium as the theoretical foundation, enforcing the theory of the "trigger event" precipitated a whirlwind of policy changes regarding the security of the United States in the months following September 11, 2001. It has been shown that neither incrementalism, nor the

paradigm of rational theories bond well with the joint observations of stasis and dramatic change that are the dual foci of the punctuated-equilibrium approach (May et al., 2009). The stasis of stadium emergency management in place prior to 9/11 compounded by dramatic changes implemented after the terrorist attacks show a pressing need to focus on the viability of punctuated equilibrium theory as the theoretical foundation. Only punctuated equilibrium works well for the specific categories in the study.

The Need for an Experienced Emergency Manager

Since the terrorist attacks that occurred on September 11, 2001, a greater case has never existed for defining the roles and requirements of stadium emergency managers. Collegiate football in the United States is increasing in popularity. Coupled with the expanded University of Michigan and Pennsylvania State University mega stadia to a capacity of well over 100,000 are billion dollar projects like the recently constructed Dallas Cowboys and New York Yankees stadia. In these venues, the role of the stadium emergency manager has taken on a whole new meaning with one goal at hand, the ultimate protection and security of the fans, the most important asset of a sport.

Crowd Management

Around the world, stadium emergency managers have been contributing to an ever growing career field that is finally gaining recognition. The true essence of emergency management was showcased as a coordinated emergency management plan put into effect near the close of 2004 soccer match in Madrid, Spain in which over 70,000 fans were evacuated from Santiago Bernabeu Stadium toward the end of a soccer match in response to a bomb threat. The public address announcer begged the spectators to

leave the stadium without panicking to prevent chaos. Surprisingly, the fans evacuated in only 10 minutes. Few injuries were reported. Just two years prior to this incident, a bomb exploded outside this stadium, injuring 17 people. The emergency management team did its job by following the four phases of emergency management: mitigation, preparedness, response, and recovery. Experience from the previous incident helped to avoid unneeded injury or even death (Associated Press, 2004). As witnessed by this example, it is easy to see what can happen when a strong emergency management plan is put in place: a smooth flow at the emergency exits, and a safe and secure evacuation. While there are many instances in which effective emergency management leadership was put to the test, a countless number of incidents much like the next example have occurred in which events did not go according to plan.

At a soccer match in South Africa, with two of the country's most popular teams ready for a match, tragedy struck as 43 people were killed and a countless number of other fans were injured. Thousands of fans waiting outside the arena climbed and pushed their way in as they tried to enter an already filled to venue capacity of 62,000. Though all major sports are represented, soccer, the world's most popular sport, leads the way with more than its fair share of critical incidents.

An issue that can be considered one of the stadium emergency manager's worst nightmares is a stadium packed with 80,000 spectators and having to have the public address announcer broadcast the presence of any type of emergency situation. An incident such as that at a 2005 college football game between Iowa State and the University of Colorado is an unfortunate example. A forecast for severe weather had been broadcast that day, and around 4 pm, a tornado warning sounded at the peak of the

tailgating period. It caused panic for most fans who were just entering the stadium but were suddenly instructed that they had to go toward the storm shelters that were a 5- to 15-minute walk away, shelters that were inadequate for such a huge crowd (Associated Press, 2005). This incident magnified the need for experienced staff who could handle emergency situations. Similar incidents within an enclosed stadium have happened as recently as 2008, when a powerful storm disrupted a NCAA basketball game at the Georgia Dome. With less than 2 minutes remaining in overtime, a brutal wind and heavy rainfall tore two pieces of fabric off the roof. Many fans ignored the public address announcer's pleas for calm by leaving their seats abruptly to get away from the downpour (Glier, 2008).

Among the large number of incidents that could affect a huge open roof venue, lightning was highlighted as the single most dangerous weather hazard that people encounter each year at a sporting event (Vavrek, Kithil, Holle, Allsopp, & Cooper, 2011). The NCAA has developed steps to help mitigate the effects of lighting within the stadium, and has argued that in order to be safe in the case of lightning, education and prevention are key. Within the stadium a dedicated individual must be present to monitor threatening weather and to make the decision to remove a team or individuals from an athletics site or event (NCAA, 2007).

One of the most catastrophic events imaginable occurred at the World Series of Baseball on October 17, 1989 between the Oakland Athletics and the San Francisco Giants. Only four minutes after the players had filled the field, a 6.9 magnitude earthquake rumbled through the stadium, but everyone, players and fans alike, managed not to panic during the whole time. That game, which would hereafter be known as the

Earthquake Series, was postponed by the commissioner, and then thousands of spectators were evacuated from a stadium without power as dusk settled over California (Baseball Almanac, 2011). Not only do natural disasters pose a serious threat to the people filling the stadia, but violence has also been known to erupt from the fans themselves.

Spectator Violence

Compared to the United Kingdom, American fan violence is indeed rare. On the other hand, such violence is so common in the UK that whenever violence occurs in another country, it has been dubbed the "Spread of the English Disease" (Madensen & Eck, 2008). Emergency managers within the United States have far fewer acts of fan violence to address than in Europe, but such incidents have been reported in this country. One such example would be the fans who were charged with criminal offenses as a result of their actions in as the so-called "Malice at the Palace." Ron Artest, AKA Metta World Peace, of the Indiana Pacers was being treated for an injury when one fan threw a drink on him. This small incident escalated quickly into a massive fight involving spectators and players (Dixon, 2004). It has also become apparent that having physical distance between players and spectators is of the utmost importance. One incident that highlights the reason for distance occurred during a tennis match in Hamburg Germany when a fan reached over a 3 foot barrier fence and stabbed Monica Seles in the back during changeover (BBC, 1993).

There are many ways for fans to become aggressive. Madensen and Eck (2008) outlined the six most common forms of spectator aggression at sports stadia:

1. Verbal—singing, chanting, and yelling taunts or obscenities.
2. Gesturing—signaling to others with threatening or obscene motions.

3. "Missile" throwing—throwing items such as food, drinks, bricks, bottles, broken seats, and cell phones at particular or random targets.
4. Warming—rushing the field or stage and trying to crash the gates to gain entry, or rushing the exit, both of which may result in injury or death from trampling.
5. Property destruction—knocking down sound systems, tearing up the playing field, and burning/damaging the venue or others' property.
6. Physical—spitting, kicking, shoving, fistfights, stabbings, and shootings.

According to a study by Miller, Veltri, and Gillentine (2008) on spectators' views of Super Bowl security issues, 96% of those surveyed felt that there is a strong likelihood of a terrorist attack at a Super Bowl in the next 3 to 5 years, Even if the threat level established by the DHA was red on that day, which denotes the most severe threats, a full 72% of those surveyed would refuse to change their plans to attend the game. Sixty-four percent of those surveyed indicated they felt safe during Super Bowl attendance (Miller et al., 2008). The certainty of a terrorist attack eventually happening at a Super Bowl did not translate to wanting enhanced security via price hikes for tickets. Only 35% of those surveyed would agree to such an increase (Miller et al., 2008).

Emergency manager expertise in preplanning and preparedness was highlighted by a recent NBA championship won by the Los Angeles Lakers in 2010. It was the seventh and final game of a rivalry with the Boston Celtics. Although a well-drawn out emergency plan was already in place, even before halftime, the violence that had been started outside the stadium began to spread. Over 100 police officers had donned riot gear prepared to meet the thousands of fans and bystanders who were not in the stadium. An

already dangerous scene became more so when rioters began to loot local businesses, set cars and garbage on fire, and clashed with local law enforcement (KTLA, 2010).

Similar Venues for Emergency Management

Other venues besides sports have had emergency related incidents; one example is the music industry. With a large number of fans in a confined area, music venues are at an extremely high risk for an emergency incident, as seen in the fire at a night club in Rhode Island. Ninety six people were killed and 187 others were hospitalized after a miscommunication involving pyrotechnics during the event (CNN, 2003). While fires at these venues happen rarely, the threat of fans rushing the stage has been a problem in the music industry for years. In 1979, at a Who concert, 11 people were trampled to death as fans rushed to get first come, first served seating at the festival (Miller, 2009). A similar incident occurred during a 2000 Pearl Jam concert when fans rushed to the stage to get close to the group (Miller, 2009). At the 3-day 30th Woodstock anniversary concert, more incidents occurred among a crowd of over 200,000 fans in the old Griffiss Air Force Base, exacerbated by high temperatures and higher concession prices (Cohen, 1999).

Airports

While not an actual stadium, American airports have many of the same struggles and problems that are impacting stadium emergency managers. Larger airports like the one in Dallas-Fort Worth have an annual passenger volume of roughly 60 million passengers. While the total number of passengers varies from day to day, the same concepts involving emergency management can be used. Instead of being filled to capacity a few dozen times a year as are football stadia, airports are typically run 24

hours a day, 365 days a year. In fact, the global airline passenger count in 2009 was 4.796 billion (Airports Council International, 2009). The combination of airport congestion and individual fear of flying can lead to some very horrific scenarios. In 2002, at one of the world's busiest airports at Chicago O'Hare, an emergency evacuation came out different than expected. Much chaos ensured after the discovery of an unplugged screening device. When given instructions to reenter, thousands of passengers tried to jump ahead to be first to the security checkpoints. In a similar manner as those acting out in sporting events, dangers can arise that involve trampling of people in front of the more aggressive passengers (Stoller, 2005).

In 2004, 276 terminals or concourses had been evacuated; almost double those of the previous year. As pointed out by the Transportation Security Administration (TSA), many of their own failures resulted from the evacuations. A high screener turnover coupled with long work hours compromised good performance. According to Bill Lyons of the American Federation of Government Employees, "Screeners have told me it was chaos and pandemonium during an evacuation, and nothing like what they trained for," and such scenarios are very similar to those of sports stadia (Stoller, 2005). Not only does the TSA have to deal with the constant maximum number of passengers for almost all flights, but other concerns remain like poor airport design, carryon inspections, lingering tension from the terrorist attacks on 9/11, and fears that the next major incident can come at any time. A major problem that airports deal with regarding evacuations is that there is no clear set of TSA standards for which an evacuation will take place. The decision calls for TSA officials at their respective airports to make the best judgment call they can (Stoller, 2005).

Emergency Management

Technically, the term *emergency management* did not originate on a specific date. Some say the first official use of this term came to use in 1803 when extensive fires in New Hampshire became overwhelming for a single state to manage, which resulted in the beginnings emergency management as we know it. The official legislation to address emergency management is better known as the Congressional Act of 1803. With no other emergency management programs undertaken by the federal government for the next 131 years, it was President Franklin Roosevelt who created several programs to stimulate the economy, including programs such as the 1934 Flood Control Act that focused on emergency management (Sebastian, 2007). After three major disasters in the 1960s, President Kennedy founded the Office of Emergency Preparedness. This office was entrusted with handling natural disaster planning and response (Sebastian, 2007).

In Executive Order 12127, signed by President Carter in 1979, many of the separate disaster relief agencies in existence were combined into what is now the Federal Emergency Management Agency (FEMA, 2010). FEMA immediately was to develop an integrated emergency management system with an all-hazards approach that included direction, control, and warning systems ranging from the smallest disaster to the ultimate emergency – war (FEMA, 2010). One of the first things observed within FEMA was just how complicated emergency management can be. FEMA was tested early on with a number of smaller disasters, but the terrorist attacks of 9/11 presented the agency with the ultimate emergency management test. Several factors have gotten in the way of FEMA operations, culminating from the issues of September 11, 2001; therefore, FEMA and 22

other federal agencies would now fall under the new Department of Homeland Security which was formed in March 2003.

Emergency Management "Public Safety, Public Trust"

Among numerous definitions of what it means to be an emergency manager, the general consensus is that to be an effective one a candidate must be well versed in the discipline of addressing and avoiding all types of risks and focusing on mitigation, preparedness, response, and recovery, while at the same time being effective in integrating emergency plans at all levels of government and nongovernment agencies. Prior to 9/11, the day-to-day role of the emergency manager involved more strategic motivation than before to the challenges of responding or reacting to specific and immediate disasters rather than from recognizing opportunities and implementing long term planning (Schneider, n.d.). The actual function of emergency management at the local level is relatively new, originating in the Emergency Planning and Community Right to Know Act of 1986 (Schneider, n .d.).

Because the role of the emergency manager is now a recognized profession, much progress has been made in gaining recognition from the vast number of institutions that offer degrees in emergency management (Emergency Management Team, 2009). The profession of emergency management has become more common in the need for disaster preparedness within the United States. Emergency management includes careers such as emergency program manager or director, emergency preparedness instructor, emergency operations center chief, director of security, risk management expert, hospital coordinator, or technical training supervisor (Emergency Management Team, 2009).

It is often perceived that the emergency management field involves emergency services and response rather than creating a framework for disaster policy and coordinating policy implementation in case of a disaster (Blanchard, 2007a). Although the public can easily equate the profession with law enforcement or firefighting, it is more difficult to understand the profession as a whole, which involves a policy framework along with the entire job description of the emergency manager. While it is true that emergency managers do share the same challenges as the aforementioned emergency personnel, the former are more concerned with the different hazard phases and overall preparedness plans (Blanchard, 2007a).

According to Blanchard (2007a), an emergency manager is someone who can "see the big picture" and communicate a strategic "big picture" vision to others within an organization or jurisdiction. This person must work with others collaboratively, including everyone concerned in the four phases of emergency management mitigation, preparedness, response, and recovery related to natural, technological, and intentional hazards. Those in the position of emergency manager must be in alignment with the an intergovernmental framework, in which every part of their field can play a significant part in how operations are conducted on all different levels of the various government organizations involved.

Blanchard (2007a) claimed that to be a professional emergency manager, one must continually be caught up with theory and science of the field and know many technical skills: interpersonal, leadership, managerial, political, and crisis management. Professional emergency managers must really know their field and want to learn all of the time because the world of hazards and disasters is not an unmovable force but one that

constantly evolves. In fact, those who decide to be an emergency manager had better be prepared to learn and improve themselves throughout their entire professional lives (Blanchard, 2007a).

Canton (2006) found that an effective emergency management program is based on three main pillars:

1. A knowledge of history
2. An understanding of social science
3. Specialized technical expertise

Canton described an ideal emergency manager who is no longer a technocrat with highly specialized skills in emergency response. Rather, such a manager has an administrative role that involves developing an entire emergency management program. Canton argued that no single source of specialized knowledge exists. It is virtually impossible for an emergency manager to act alone as far as implementing the three pillars of emergency management.

It has been shown throughout history that the larger the government response to disasters, the higher is the public's demand for disaster assistance. In actuality, such services as those from the fire department, police officers, and local emergency places have helped to meet the public demand the best for increased expectations. Choi (2008) explained that a continual problem with emergency management is based on four main issues:

1. Response orientation;
2. lack of political support and insufficient funding;
3. less emphasis on capacity building; and

4. intergovernmental and coordination failures.

In March of 2007, FEMA's Emergency Management Institute convened a working group to formulate the basic foundation of emergency management principles. While numerous publications and theories have expounded on what the principles should be, a consensus has not yet existed on the nature of how emergency management should be defined. In the end, the working group selected eight strategic principles that they found to underlie the doctrine of how an effective emergency management program should appear. Emergency management must be

1. *Comprehensive***:** Emergency managers consider and take into account all hazards, all phases, all stakeholders and all impacts relevant to disasters.
2. *Progressive***:** Emergency managers anticipate future disasters and take preventive and preparatory measures to build disaster-resistant and disaster-resilient communities.
3. *Risk-driven***:** Emergency managers use sound risk management principles (hazard identification, risk analysis, and impact analysis) in assigning priorities and resources.
4. *Integrated***:** Emergency managers ensure unity of effort among all levels of government and all elements of a community.
5. *Collaborative***:** Emergency managers create and sustain broad and sincere relationships among individuals and organizations to encourage trust, advocate a team atmosphere, build consensus, and facilitate communication.
6. *Coordinated***:** Emergency managers synchronize the activities of all relevant stakeholders to achieve a common purpose.

7. *Flexible***:** Emergency managers use creative and innovative approaches in solving disaster challenges.
8. *Professional***:** Emergency managers value a science and knowledge-based approach based on education, training, experience, ethical practice, public stewardship and continuous improvement. (Blanchard, 2007b)

National Incident Management System (NIMS)

The Homeland Security Presidential Directive (HSPD)-5 directed the Secretary of Homeland Security to develop and administer the National Incident Management System (NIMS). From multiple lessons that national leaders have learned, a consistent nationwide template was needed to enable governments and responders to work together effectively and efficiently to manage incidents and planned events (FEMA, 2009). Within this directive, a National Response Plan was also required, which is now known as the National Response Framework, a guide on how the nation will conduct an all-hazards response. The NIMS works with public departments and agencies as well as the private sector systematically and proactively "to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property and harm to the environment" (DHS, 2008).

Simulation and Technology

Much technology has been developed in the United States since the terrorist attacks of September 11, 2001. While it is commonplace for individuals to see the need for an advanced flight simulator for a pilot or a simulation module for controlling a

nuclear power plant, it is less well known that those in emergency management are also using this latest technology to their advantage.

Learning approaches based on simulations "aim to imitate a system, entity, phenomenon, or process and attempt to represent or predict aspects of behaviors of the problem or issue being studied" (Langley, 2006, p. 5). These kinds of simulations can be used for experiments that imitate real life behaviors and outcomes under different circumstances (Langley, 2006). Emergency management simulation software is a standardized program found in emergency operation centers managing crisis information and integrating everything involved within a common organizational structure (U.S. Department of Justice, 2002). This software can coordinate responses among all jurisdictions and agencies involved and very importantly share critical information to prepare for, respond to, resolve, and review processes associated with daily activities, events, and incidents (E-sponder, 2008).

SportEvac is a recent generation of software that is composed of stadium blueprints. The University of Southern Mississippi software developers have created virtual stadia with avatars as fans that simulate real emergencies to DHS, 2010). In particular, and uniquely, SportEvac can imitate how human beings would react to an event that involves emergency management. SportEvac can simulate every possible scenario as opposed to older technology that could simulate an event with no more than 5,000 people (DHS, 2010). Sports stadium emergency managers can use this 3D software to understand how to respond to a variety of complex disasters in their own stadium. Three questions stand out regarding standards of effective emergency management:

1. How can my stadium be evacuated in the shortest time?

2. How can civil emergency workers quickly get in as fans are dashing out?
3. How can our stadium guards and ushers provide valuable information to civil responders and assist them as the evacuation unfolds?

Mike Matthews of the DHS Infrastructure and Geophysical division has said that "SportEvac isn't simply more realistic; it will be a national standard" DHS, 2010).

Across the globe, the importance of emergency management software is the same as it is in the United States and more so in some cases. Soccer, the top sport, makes up a majority of worldwide events along with cricket and rugby. The Pedestrian Logistics Analysis Tool (PLATO) is another such simulation tool available to emergency managers for accessing the outcomes of an allout evacuation. SIMfX is an emergency management simulator in which a more viable option is presented to train emergency responders to be more efficient and more cost effective in the long run for stadium emergency management and work for any emergency response team. The program is very flexible and helps both training and practice, especially because of the simulation of real life situations and decreased training costs due to the internal training scenarios (SIMfX, 2010).

A New Breed of Stadia

When simulation technology is involved, much needs to be considered in building new stadia. The $1.3 billion Dallas Cowboys stadium in Arlington, Texas that was constructed recently illustrates the future of technology in developing and refurbishing new venues. A primary part of addressing emergency management is power, and this new stadium has 70 substations, 15 switchboards, and many electrical distribution products for emergency power needs in the cases of an outage or surge (Schuellerman, 2010). An

additional feature is the excellent lighting as highlighted by Hall, Cieslak, Marciani, Cooper, and McGee (2010) as an extremely important standard of protective security. More than 2,900 TV screens are distributed throughout the entire stadium, and 185 security cameras add to the emergency management team's ability to handle a variety of emergency situations. These systems incorporate multiple redundancy features to enhance reliable stadium communications and facilitate downtime. Even the backups are backed up to guarantee a continual power supply source if the stadium should lose power for any unexpected reason (Wong, 2009).

The first role of the emergency manager involved the early stages of design to influence how all things move and flow into, around, and out of a facility. Francis (2009) claimed that the worst way to distribute funds is to ignore enough training in important areas. Francis suggested first training the primary security caregivers, the career people who have a vested interest in day-to-day security operations, especially in using behavioral pattern recognition techniques at all security levels. With the additional focus on training, can better evaluate the people who are coming into buildings, events, and sports venues to give them that once over to mitigate an issue before it occurs (Francis, 2009).

Summary

The role of the stadium emergency manager has evolved, but along with its evolution comes the requirement for a qualified stadium emergency manager force capable of handling the transition to a highly technical career field in which experience is a crucial qualification. It is important to grasp the foundation of baseline qualification standards in order to set current and future stadium emergency managers up for success.

Chapter 3 outlines the methods undertaken to identify baseline qualification standards for stadium emergency managers in this study.

Chapter 3: Research Method

The purpose of this study was to identify baseline qualification standards needed for NCAA Division I-A football stadium emergency managers that originated from those who are currently working in the profession. Fifty Division I-A football stadium emergency managers participated in this study, the ultimate goal of which was information sharing to benefit the NCAA and American sports fans.

Research Design and Approach

This study examined the baseline qualifications needed for NCAA Division I-A football stadium emergency managers. The research participants formulated the required baseline qualifications for holding a stadium emergency manager job. The central research question for the study was as follows: "What baseline qualification standards are needed for NCAA Division I-A stadium emergency managers?" The specific subquestions for this study included:

R2: What is the perceived level of importance of the baseline qualification standards?

H_0 Significant differences will not exist regarding the perceived level of importance of qualifications from individuals filling the role of university stadium emergency manager.

$H_{1:}$ Significant differences will exist regarding the perceived level of importance of qualifications from individuals filling the role of university stadium emergency manager.

Eight stadium emergency management expert volunteers represented their universities to form the expert panel from the following conferences:

- Big East
- Big Ten
- Conference USA
- Mid-American
- Pacific Conference Twelve
- Southeastern Conference
- Sun Belt
- Western Athletic Conference

For security reasons, the name of the school within each conference was kept confidential. From information gathered from each university's athletic website, I made a preliminary phone call to each individual responsible for the university stadium emergency management program. Once 118 of120 universities stadium emergency managers were confirmed, they were sent invitations to participate in the study (see Appendix A). Nine stadium emergency managers volunteered to serve on the panel. The first eight volunteers were selected to serve as panel members representing represented 66% of the Division I-A football conferences with stadium spectator capacity ranging from 30,000 to 90,000. Compounding this diverse group of stadium emergency management experts was their representation of all major geographic locations in the United States (see Figure 1). Such variance raised expectations for different opinions on needed qualifications and the quality of the recommendations.

Figure 1: NCAA Football, Division I (bowl subdivision)

I chose a quantitative research methodology for this three-round Delphi study. Quantitative methodologies allow researchers to familiarize themselves with the problem or concept to be studied and perhaps generate hypotheses to be tested. In this paradigm, the emphasis is on facts and causes of behavior (Bogdan & Biklen, 1998). The information is in the form of numbers that can be quantified and summarized. A mathematical process is the norm for analyzing such numeric data, and the final results are expressed statistically (Charles, 1995). A quantitative analyst fragmented and delimited the phenomena into measurable or common categories to be applied to all of the subjects or to comparable situations (Winter, 2000).

The Delphi method was used for the study design. The Delphi method originated from a series of studies conducted by the RAND Corporation in the 1950s (Okoli & Pawlowski, 2004). Its overall objective was for a group of experts to come to the most reliable consensus (Okoli & Pawlowski, 2004). The Delphi method is an iterative process used to collect and distill the judgments of experts using a series of questionnaires interspersed with feedback. The questionnaires are designed to focus on problems, opportunities, solutions, or forecasts. Each subsequent questionnaire is developed based on the results of the previous questionnaire (Skulmoski, Hartman, & Krahn, 2007). The Delphi method can be used when there is incomplete knowledge about a problem or phenomenon (Adler & Ziglio, 1996).

The Delphi method improves the generation of critical ideas through a structured collection of information and the processing of the collective input from a panel of geographically dispersed experts (Adler & Ziglio, 1996). By facilitating communication between and among expert panels, the process is effective and the group, as a whole, can address a complex problem (Linstone & Turoff, 1975). The advantages of the method are numerous and include

- Time and cost-effectiveness
- The ability to discuss broad and complex problems
- The ability for a group of experts with no prior history of communication with one another to discuss a problem effectively as a group
- The ability for participants to have sufficient time to synthesize their ideas
- The ability for participants to respond at their convenience
- The ability to record the group activity that can then be further reviewed

- The anonymity of participants, providing them with the opportunity to freely express opinions and positions. (Rotondi & Gustafson, 1996, p. 40).

According to Martino (1983), a Delphi study has several disadvantages, including the following:

- Discounting the future: Future (and past) happenings are not as important as the current ones; therefore, one may have a tendency to discount the future events.
- The simplification urge: Experts tend to judge the future of events in isolation from other developments. A holistic view of future events in which change has had a pervasive influence cannot be visualized easily. At this point cross-impact analysis is of some help.
- Illusory expertise: Some of the experts may be poor forecasters. The expert tends to be a specialist and thus views the forecast in a setting which is not the most appropriate one.
- Sloppy execution: There are many ways to do a poor job. Execution of the Delphi process may easily result in loss of required attention.
- Format bias: It should be recognized that the format of the questionnaire may be unsuitable to some potential societal participants.
- Manipulation of Delphi: The responses can be altered by the monitors in the hope of moving the next round of responses in a desired direction. (p. 27)

Because I had already obtained assurances of participation, nonresponses were statistically very low for the Delphi surveys in this study. Another benefit of a Delphi study is that group size does not depend on statistical power, but rather on group

dynamics for arriving at consensus among experts; thus, researchers have recommended that there be 10–18 experts on a Delphi panel (Okoli & Pawlowski, 2004). The Delphi study is quite flexible in design with a follow up of a second interview, permitting the collection of valid data. According to Skulmoski, Hartman, and Krahn (2007), the process stops when the research question is answered but also when consensus is reached, theoretical saturation is achieved or sufficient information has been exchanged.

Setting and Sample

In an effort to achieve the project objectives and fulfill a substantial gap in the literature, several important factors highlighted the importance of the eight university volunteers who served as part of the expert panel in this Delphi study. These expert panel members had the opportunity to read an invitation letter that detailed what their portion of this Delphi study would entail (Appendix A). Before receiving the preliminary round survey, the members were also able to read a statement of consent that presented the study in even more descriptive terms. The expert panel members also were required to sign the consent form and either email or fax it with assurances that they knew what the required expectations would be. The key to this study came from the initial set of qualification standards compiled by the expert panel, making the reasons for their willingness to volunteer even more significant. The validity of the study was based on these initial standards.

The preliminary round of this Delphi-based study consisted of having eight stadium emergency management experts reveal what they think are the most important qualifications for stadium emergency managers. They were asked to compile a list of 25 baseline qualifications to answer the openended question: “What baseline qualification

standards are needed for NCAA Division I-A stadium emergency managers?" To avoid redundancy, any duplicates of recommended qualifications were removed during the Delphi study.

In the first round of the study, the expert panel reviewed and ranked, using a 5-point Likert scale, the qualifications needed for stadium emergency management positions. They could also add up to 5 qualification standards that they deemed appropriate. Delphi Round 2 was delivered to the same panel as Round 1 with an updated list of baseline qualifications. The expert panel again ranked each of the qualifications on a 5-point Likert scale, a scale based on the 26 additional recommended qualifications added from Delphi Round 1. The recommendations for the qualifications were randomized for Rounds 1 and 2. This randomization was done so that the expert panel would not see the same survey for Rounds 1 and 2 in the same order of qualifications. At the completion of Round 2, the expert panel portion of the study was complete. The panel reduced the list of 187 originally recommended qualifications, ranked them on a 5-point Likert scale, and shortened the list to a more manageable list for the top 50 stadium emergency manager qualifications. The latter was included in the Round 3 survey that was emailed or, in some cases, mailed to all other Division I-A stadium security managers ($N = 112$) in which they were asked to rate on a 5-point Likert scale the top 50 recommendations from the expert panel.

An area of importance regarding the high participation rate was to keep the final questionnaire to the minimum number of questions needed to complete the objectives of this study. In Hall's 2006 study, a total list of 134 standards was generated that was completed by 26 participants with a response rate of 78.6%. In this study, I was able to

have a 100% response rate by the expert panel for the preliminary round and Rounds 1 and 2. By using a smaller questionnaire format for the Round 3 survey, as expected, I was able to achieve a reasonably high response rate of 38% with the rest of the NCAA Division I-A.

Delphi questionnaire results for Rounds 1, 2, and 3 were analyzed using SPSS 20 software in relation to their perceived level of importance. Descriptive statistics (mean, median, mode, and standard deviation) were provided for each standard given by the respondents. After the conclusion of Round 3, an Analysis of Variance (ANOVA) was run to test for any significantly different perceptions in the importance of recommended qualification standards. A number of people with different career specialties are filling the role of the stadium emergency manager. Some examples are dedicated emergency manager, local police, stadium police, or city/county emergency management directors. Therefore, it was essential to test what different career groups think are important qualifications in the role of a university stadium emergency manager.

A very successful technique in Delphi studies for testing researcher hypotheses are ANOVAs, which provide statistical tests of whether or not the means of several test groups of the same population are equal. ANOVAs have been found to be especially useful for testing the hypothesis when comparing more than two means, such as the eight different job titles that are included in this Delphi study. In similar Delphi studies like that of Hall (2006), using an ANOVA can help researchers test for different perceptions of the importance of (n=134) security standards for effective security management. Unexpectedly, the hypothesis for their study was rejected, for no significant differences were found for the importance of standards among people in different career fields.

Because the present study was a very similar type of Delphi study, it was imperative to show the levels of importance among the different career types in the role of university stadium emergency manager. The goal was to survey all 120 Division I-A stadium emergency managers to see if the professionals from different job titles/career fields holding that position would have a different perception of the importance of standards.

To reach the most geographically separated universities and a large number of study participants within the United States, email surveys were the most advantageous because of the impracticality and prohibitive costs of traveling to each university. A survey can reduce researcher bias and ensure the same questions are asked of all participants. The eight member expert panel was an important step in ensuring the validity of the final survey instrument delivered to the rest of the 112 stadium emergency managers. Ultimately, the expert panel created the final survey instrument by its collaboration on the initial survey, Rounds 1 and 2, which was essential for ensuring that a valid survey instrument was given to the rest of the NCAA Division I-A stadium emergency managers.

In order to improve the response rate for Round 3 of this Delphi study, an email containing the consent form that also contained a link that took them directly to the survey was delivered via internet survey (see Appendix B), with an estimated time to complete the survey based on results from the expert panel. According to Orlon (2009), one of the best ways to get individuals to take a survey is to keep the first page short and to the point, for long complicated instructions will discourage answering surveys. Orlon also noted that a notification of what the expected results from this survey could bring to

each university is an effective way to get individuals to participate. In addition to the Round 3 emailing, an actual mailing of the survey (*N*=82) was delivered to the university stadium emergency managers who had not responded to the first two deliveries of the emailed survey.

Data Collection and Analysis

Data from all rounds of this Delphi study were collected via email surveys and a mailed survey for Round 3 only. The preliminary round consisted of the eight members of the expert panel listing ≤ 25 baseline qualifications based on the open ended question: "What are the current baseline qualification standards needed for NCAA Division I-A football emergency managers?" The survey for Round 1 was the 161 baseline qualification standards that originated from the expert panel (*n*= 8) in which the same expert panel was asked to rate on a 5-point Likert scale the importance of the qualifications. In hopes of creating a stronger survey instrument, the panel was asked to list an additional five qualifications that might come to mind after seeing other recommendations by the expert panel. Round 2 surveys were delivered to the same expert panel through an emailed survey link where they were again asked to rate on a 5-point Likert scale the importance of the 161 original qualifications in addition to the 26 additional qualifications stemming from Round 1 surveys. The panel was also asked to select from a list of eight job titles that most closely resembled theirs at their university of employment. Respondents were also asked to list ≤ 5 training opportunities that they have at their universities as a way to network and share additional training of which other stadium emergency managers may not be aware.

Round 3 surveys were delivered to the rest of the NCAA Division I-A stadium emergency managers (*N*=112) in which they were asked to rate on a 5-point Likert scale the top 50 qualifications stemming from the expert panel, and to select from a list of eight job titles that most closely resembled that they have at their university. Additionally, Round 3 surveys were mailed to each of the Stadium Emergency Managers (*N*=82) after the week 2 emailing period for those from whom I had not received an online survey in an effort to achieve a higher response rate. Respondents were also asked to list around 5 training opportunities that they have at their universities as a way to network and share additional training of which other stadium emergency managers may not be aware. All survey rounds were analyzed using IBM SPSS Statistics 20 for mean, medium, mode, and Standard Deviation. After the conclusion of Round 3 surveys, an ANOVA was run to test for differences in perceived levels of importance of qualification standards among those from varied career types that could be filling the role of university stadium emergency manager. To test for Type I error, a level of significance was set at $\leq .04$.

Instrumentation and Materials

This study involved the development of a survey instrument to examine current and additional qualifications needed for NCAA Division I-A stadium emergency managers. The initial survey instrument was created by the expert panel after the completion of the open ended research question: "What are the current baseline qualification standards needed for NCAA Division I-A football emergency managers?" The expert panel created the survey instrument by using their qualifications as stadium security management experts in formulating a valid instrument to be used for the rest of the NCAA Division I-A stadium emergency managers (*N*=112), compounded by the

unique contributions and experience of the expert panel. A broad scale of the current individuals holding the position was based on intrinsic factors such as stadium capacity, NCAA division, job description, and geographic location. In the end, a diverse group of stadium emergency managers formulated a list of 25 qualifications that they deemed important to the career field of 161 total baseline qualifications.

After all rounds of this Delphi study, it was required by the Walden University Institutional Review Board to have each round survey checked to make sure they upheld the highest standards of research integrity and university standards. A Round 1 Delphi survey consisting of the 161 recommended qualifications by the eight expert panel members was delivered to the expert panel, which was afforded the opportunity to list an additional ≥5 qualifications that might have originated from seeing other panel members' lists of recommended qualifications. Using this format added to the validity of the survey instrument in that the expert panel was given the opportunity to see what the other stadium emergency managers have found to be important qualifications for their own positions.

Round 2 surveys were very similar to the Round 1 surveys, but expert panel members were not given the opportunity to list ≥ 5 additional recommended qualifications; instead, they were asked to select from a list of eight job titles that most closely resembled theirs at their university of employment. Respondents were also asked to list ≤ 5 training opportunities that they have at their universities as a way to network and share additional training of which other stadium emergency managers may not be aware. The final list of 50 recommended qualifications for NCAA Division I-A stadium emergency managers was tallied from the Round 2 surveys and at this time ended the

expert panel's participation within the study. The expert panel was essentially being used to come to a practicing professional consensus of the top 50 baseline qualifications that they ranked from the total list that was distributed to the rest of the NCAA Division I-A stadium emergency managers.

Round 3 surveys were compiled of the 50 highest ranked qualifications and were delivered to the rest of NCAA Division I-A stadium emergency managers (N=112) with the results of the Round 2 expert panel added to the final round for statistical purposes. Respondents were asked to select from a list of eight job titles that most closely resembled theirs at their respective universities. Respondents were also asked to list ≤ 5 training opportunities that they have at their universities as a way to network and share additional training of which other stadium emergency managers may not be aware. This additional question was added as a way to network and share information about any additional training that different university may be practicing throughout the NCAA.

The final outcome of this Delphi study was a tallied list of the top 50 recommended qualifications to be delivered to all NCAA Division I-A football stadium emergency managers as a way to network and implement training/strategies that are not currently being used in order to strengthen the qualifications of our current and future NCAA stadium emergency manager force.

Protection of Human Participants

An attached cover letter outlining objectives of the Delphi study with a guarantee of confidentially for the expert panel and anonymity for the rest of the NCAA participants along with adherence to the Institutional Review Board's Human Subjects Guidelines were included with the survey emailing (Walden University IRB# 11-21-11-

0113818). Integrity of the data collected and protection of research participants were the foremost guiding principles of this study. In general terms, responsible conduct in research is simply good citizenship applied to professional life. Researchers who report their work honestly, accurately, efficiently, and objectively are consistently right regarding responsible conduct (Steneck, 2007). To ensure research integrity, respondent names were not included on the survey instrument. A password protected access database was created with university name in order to assist with detecting universities that have already responded to the survey. Such a protocol was important to avoid having the agencies receive subsequent emails requesting that they fill out the survey after completion. As surveys were returned, I marked "yes" to indicate that the survey had been sent back. Additionally, I used the services of an online survey service as a way to ensure that all data received were kept in professional order, and that survey recipients would not receive duplicate surveys. This service also served as a redundancy for security of respondent data because only I had access to the password protected site. All survey data not maintained on the online survey provider will be maintained on an external hard drive locked in a file cabinet for 5 years. After that time, all data will be formatted or shredded and rendered unrecoverable.

Summary

In Chapter 3, the research method for the study was detailed. A description of the research questions, selected sample, survey instrument, data collection and analysis procedures, means for ensuring human subject protection, and the role of the researcher were included. Chapter 4 presents the responses of the expert panel for NCAA Division I-A stadium managers.

Chapter 4: Results

This chapter includes preliminary round survey responses received from the expert panel, along with Delphi survey responses for the final three rounds in which new knowledge of the top 50 baseline qualifications needed for NCAA Division I-A stadium emergency managers was generated. Results are provided for the expert panel preliminary round, expert panel Round 1, expert panel Round 2, and finally results ranking 50 qualifications from the Round 3 responses from NCAA Division I-A stadium emergency managers.

The purpose of this study was to formulate and explore baseline qualification standards needed for current and future Division I-A College football emergency managers by those who are currently holding that position at the Division I-A university level. Countless incidents take place at Division I-A universities on game days; previous research shows that current stadium emergency managers are not as qualified as they should be. According to Beckman (2006), Hall (2006), and Cunningham (2007), there is a severe lack of training for stadium emergency managers. Determining baseline qualification standards that universities can use for current and future stadium emergency managers will help keep stadium emergency management practices consistent throughout the NCAA. The remainder of this chapter presents findings for the Delphi study that was conducted and answers the research questions and hypothesis stated in Chapter 1.

Research Questions

1. What baseline qualification standards are needed for NCAA Division I-A stadium emergency managers?

2. What is the perceived level of importance for the baseline qualification standards?

Hypothesis

H_0: Significant differences will not exist regarding the perceived level of importance of qualifications from individuals filling the role of university stadium emergency manager.

H_1: Significant differences will exist regarding the perceived level of importance of qualifications from individuals filling the role of university stadium emergency manager.

Delphi Procedures

Starting in November of 2011, with approval from Walden University (as indicated in Chapter 3), I carried out an Internet search of the athletics websites for each of the 120 Division I-A Universities with a football program by looking for contact information for the person responsible for the football stadium emergency management plan. After that, I made a phone call to each university (N=120) to confirm the identity of that individual, and he was able to verify 120/120 stadium emergency managers. Based on contact data, 112 invitational letters were emailed to their respective universities (Appendix A). This invitation letter asked the managers to be part of an expert panel that would compile a preliminary round of 25 baseline qualifications needed for the role of stadium emergency manager. The first eight people who volunteered to serve on the expert panel managed stadium capacities ranging from 30,000 to 90,000 and represented eight of the 12 conferences in NCAA Division I-A universities that have a football

program. This group of experts signed a consent form and emailed or faxed it to me, guaranteeing confidentially and strict adherence to research integrity.

Along with the preliminary round of this Delphi study, the emergency management experts were also asked to participate in the first round of this study in which they would rank on a 5-point scale the total list of 161 baseline qualifications compiled by the expert panel in the preliminary round, and to list an additional five qualifications that might have originated from seeing other qualifications from the expert panel. For the second and final round of the expert panels' participation in this Delphi study, the panel was asked to select from a list of eight job titles that most closely resembles their own at their university, to rank on a 5-point scale using the indicators of *unimportant*, *of little importance*, *moderately important*, *important*, and *very important* the original list of 161 baseline qualifications in addition to ranking the 26 additional recommendations that were added in Round 1 of this Delphi study. At the end of Round 2, the expert panel was asked to list any additional training that they or their staff might have completed to be a qualified emergency manager as a way to form a tallied list of training strategies to share with the rest of their colleagues that could be used throughout the NCAA.

Round 3 of this Delphi *N* study was emailed to the rest of the NCAA (*N*=112) managers along with a consent form. In it, they were asked to select from a list of eight job titles that most closely resembled their own at their university to rank on a 5-point scale the top 50 qualifications based on the rankings from the expert panel in Round 2. Finally, they were asked to list any additional training that they or their staff might have completed to have a more complete emergency management program. In this way, a

tallied list could be formed to share training strategies with the rest of the NCAA that could be used throughout the NCAA (see Appendix I for the final list). Additionally, Round 3 surveys were mailed to each of the Stadium Emergency Managers (*N*=82) after the Week 2 emailing period for those from whom I had not received an online survey in an effort to achieve a higher response rate.

Delphi Study

The Delphi study was conducted over 3 months and included job titles like director for facilities and event management, associate athletic director for facilities and operations, assistant athletic director for event management, director, event management and facilities, senior associate director of athletics, associate athletics director for operations, university or local police department, associate athletic director of internal operations, and university emergency manager representing a total of 50 of the NCAA Division I-A universities that have a football program. The expert panel rounds had a 100% completion rate for the preliminary round, the first round, and the second round. The third round of this Delphi study had a completion rate of 38% with 42 of the 112 remaining universities choosing to participate in this study, which brought the total completion rate of this study to 42%.

Table 2

Participation Rates for Delphi Study

Round Number	Purpose Of Round	Number Of Experts Asked To Participate	Number Of Completed Surveys	Percent Completed
Expert Panel Invitation Letters sent	Invitation Letters were sent to 112 NCAA Division I-A University Stadium Emergency Managers. Eight universities were left out because of no contact information at time of mailing	112	Eight Consent forms for the expert panel	Nine Stadium Emergency Managers Volunteered to participate or 8%
Preliminary Round: "Expert Panel"	Compile a list of 25 baseline qualifications	8	8	100%
Round 1: "Expert Panel"	Rank on a 5-point Likert Scale Total list of 161 Qualifications and add 5 Additional Qualifications	8	8	100%
Round 2: "Expert Panel"	Rank on a 5-point Likert Scale Total list of 187 Qualifications, select job description that most closely resembles that of your own, and list ≤ 5 training/educational opportunities that they have available at their university	8	8	100%
Round 3: "Rest of the NCAA Plus Exert Panel"	Rank on a 5-point Likert Scale the final list of 50 qualifications, select job description that most closely resembles that of your own, and list ≤ 5 training/educational opportunities that they have available at their university	120	50	42%

A Delphi study was chosen for this research based on my desire to have research-based facts on what professionals in the field of stadium emergency management believe to be the top qualifications for holding that position within the university. Common knowledge would show that no one knows more about the needs and qualifications of a position than those who are currently filling that position.

Table 3

Participation by Occupation for Each Delphi Round

Occupation	Preliminary Round	Round 1	Round 2	Round 3
Director for Facilities & Event Management	2	2	2	13
Associate Athletic Director for Facilities & Operations	1	1	1	10
Assistant Athletic Director for Event Management	1	1	1	9
Senior Associate Director of Athletics	0	0	0	1
Associate Athletics Director for Operations	0	0	0	2
University or Local Police Department	1	1	1	3
Associate Athletic Director of Internal Operations	1	1	1	1
Dedicated University Emergency Manager	2	2	2	11
Total	8	8	8	50

Delphi Preliminary Round Findings

In the preliminary round of this Delphi study, eight volunteers took an Internet survey in which they were asked to answer the following openended question: What baseline qualification standards are needed for NCAA Division I-A stadium emergency managers? The expert panel was given the opportunity to list up to 25 qualifications that they felt were needed for the position of stadium emergency manager. A copy of this preliminary round survey can be found in Appendix B. A total of 161 baseline qualifications was used as a starting point before moving on to Delphi Round 1. To eliminate redundancy, duplicated qualifications were removed, and as seen in Appendix I, I updated the total list of 161 qualifications to make it easier for all participants to comprehend. For example, if an expert panel member listed a course number through the Department of Homeland Security, I would list the actual course title with the course number, so the participants would not have to research the course title.

Table 4

Delphi Preliminary Round Results of 161 Baseline Qualification Standards

Preliminary Round Results
1. (CARVER) Method Training "Critically, Accessibility, Recoverability, Vulnerability, Effect, Recognizability"
2. (DHS) Sport Event Evacuation Training
3. (DHS) Sport Event Risk Management Training
4. (DHS) Sports Incident Management Training
5. Ability to identify potential threats
6. Able to speak, write, & give directions in multiple languages (more prudent in diverse areas of the U.S. i.e. CA)
7. Americans with Disabilities Act training
8. Assess stadium against Department of Homeland Security (DHS) and National Infrastructure Protection Plan (NIPP) standards
9. Attend Conference to stay up to date on emergency planning
10. Attend NSCS degree program for stadium security
11. Attend Severe Weather preparedness training through National Weather Center
12. Attend weather preparedness training through National Oceanic & Atmospheric Administration
13. Be able to work closely with local law enforcement agencies
14. Bi Annual full scale exercises related to facility
15. Biological Agent Training
16. Bomb threat response training
17. BS/BA Degree in Emergency Management or Related Field
18. Building Science/Architectural Training
19. Business continuity training
20. Certification in Crowd Safety Management
21. Certification in emergency management from Emergency Management Institute
22. Command Staff attended FBI National Academy
23. Communication and Information and Information Management (Federal Emergency Management Agency)
24. Courses through Emergency Management Institute

(table continues)

Preliminary Round Results

25. Create emergency plans for stadium
26. Create high functioning multi agency capable incident command system
27. Crime prevention through environmental design training
28. Crisis communications training
29. Crowd management planning in emergency situations – including egress, & additional shelter strategy
30. Crowd Management Training
31. Crowd management training and equipment for riotous crowds
32. Crowd Manager "International Association of Venue Managers" (IAVM)
33. Decisionmaking Training
34. Design a tiered emergency action plan
35. Detailed event/facility operations plan and layout
36. Develop and Implement front line staff security/safety training
37. Developed and Implement Evacuation plans/training
38. Developed and Implement Mitigation plans/training
39. Development & implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.
40. Development of response to less common emergencies: radiological, biological, chemical, nuclear, explosives
41. Dignitary Protection Training and plan for high profile guests
42. Dispatch training, command post operations with both athletics & Police Department
43. E-141 Instructional Presentation and Evaluation Skills (FEMA) course
44. E-146 Homeland Security Exercise and Evaluation Program certification (HSEEP) FEMA course
45. E-155 Building Design for Homeland Security (FEMA) course
46. E-276 Benefit Cost Analysis (FEMA) course
47. E-390 Emergency Management Planning, Preparedness, Training and Education for Colleges and Universities (FEMA) course
48. Electrical safety & maintenance training in compliance (OSHA) regulations
49. Emergency Management Training
50. Emergency Manual development course
51. Emergency Medical Training
52. Emergency Medical Training (awareness of system)
53. Emergency Operations Center Management and Operations (Federal Emergency Management Agency)

(table continues)

Preliminary Round Results

54. Emergency training as it applies to ADA situations
55. Enhance emergency response and recovery operations
56. Evacuation plan and exercise
57. Evaluate building shortfalls
58. Evaluate communication assets and liabilities
59. Evaluate Emergency Action Plan on regular basis
60. Evaluate potential technology upgrades to enhance security
61. Event Commander attend FEMA Emergency Management Institute
62. Experience in crowd management strategy / public assembly safety
63. Experience using the Incident Management System
64. Experience with Large Event Planning
65. Facial recognition camera system and venue camera monitoring
66. Familiarity with appropriate laws/regulations to reduce liability and prevent negligence
67. Federal Emergency Management Agency Emergency Planning
68. FEMA emergency management training
69. Fire Safety Code Training
70. Fire Safety Training (Awareness)
71. First aid, CPR certification
72. Form Emergency Action Plan for each facility
73. G-358 Evacuation and Reentry Planning (DHS) course
74. G-367 Emergency Planning for Campus Executives (DHS) course
75. Have all staff enrolled in self-pass wellness/physical fitness training
76. Have command staff attend the Academy for Venue Safety and Security; Core Training
77. Have Event Commander graduate as a Venue Safety and Security Manager
78. Have knowledge of "best practices" from other stadia
79. Hazardous Materials Awareness
80. HAZMAT certification
81. Health Code Training
82. ICS-200 ICS for Single Resources and Initial Action Incidents (NIMS) course
83. ICS-100A Introduction to Incident Command System (NIMS) course
84. ICS-300 Intermediate Incident Command System (NIMS) course
85. ICS-400 Advanced Incident Command System (NIMS) course
86. ICS-700 National Incident Management System – An Introduction (NIMS) course

(table continues)

Preliminary Round Results

87. ICS-800 National Response Plan – An Introduction (NIMS) course
88. Identify and evaluate physical protection systems
89. Identify terrorist threats and motivations
90. Identify vulnerabilities in current venue setup
91. Improvised Explosive Device recognition training
92. International Building Code familiarization
93. IS-271 Anticipating Hazardous Weather and Community Risk
94. Job shadow at larger venue
95. Know how to conduct emergency response plan drills
96. Know how to develop a risk management plan
97. Know how to develop and have written an Emergency Response Plan
98. Know how to properly gauge risk level of potential threats
99. Know how to train event staff on emergency management
100. Know who to contact for different emergencies
101. Knowledge of (Department of Homeland Security) grants available
102. Law Enforcement Training
103. Leadership Training
104. Leadership training: as it applies to emergency & disaster situations
105. League (NCAA/NFL) or Sport Specific Event/Game Regulation Training
106. Live-action, onsite emergency trainings covering responses to Level 1 (i.e. contained fire) & Level 2 (i.e. earthquake) types of emergencies – Coordinated through FEMA & Department of Homeland Security
107. Master Continuity Practitioner
108. Master's Degree in Emergency Management or Related Field
109. Multivenue/site emergency (including indoor & outdoor facilities) & crowd management training
110. National Center for Spectator Sports Safety & Security – SESA system training
111. National Center for Spectator Sports Safety & Security – Sport Evac Training
112. National Center for Spectator Sports Safety & Security – Venue staff training
113. National Center for Spectator Sports Safety & Security –Professional Development Program
114. National Center for Spectator Sports Safety & Security-Certificate Program
115. National Incident Management System (NIMS) Training
116. National Institute for Certification in Engineering Technologies (NICET) training (fire systems, code, alarms)

(table continues)

Preliminary Round Results

117. National Institute of Environmental Health Sciences (NIEHS) – Earthquake response training
118. National Weather Service (NWS) Storm Spotter Training
119. NCAA rules training
120. NFPA-1600: Standard on Disaster/Emergency Management and Business Continuity Programs
121. Occupational Safety and Health Organization Training
122. Occupational Safety and Health Organization Training compliance training
123. Officer Down Training
124. Physical Security Professional (PSP)
125. Pre event briefings; post event reviews
126. Professional Continuity Practitioner
127. Proper radio communication skills
128. Public Relations Training
129. Quarterly table top exercises
130. Risk Assessment training
131. Run a mock disaster drill
132. Run tabletop exercises for Emergency Action Plan
133. Security Training Awareness
134. SKYWARN weather spotter training (more prudent to Midwest/south regions)
135. Sport Event Evacuation Training and Exercise "National Center for Spectator Sports Safety and Security" (NCS4)
136. Sport Event Risk Management (DHS) AWR-167)
137. Sport Event Security Training through Southern Miss for Event Commander
138. Sports and Special Events Incident Management, "The Texas Engineering Extension Service" (TEEX)
139. Sports Event Evacuation and Training
140. Surveillance and Observation Training
141. Threat awareness training
142. Traffic Management Training
143. Train staff for proficiency in Incident Command System forms and National Incident Management System curriculum
144. Trained in Automated External Defibrillator (AED) use
145. Trained in Basic Life Support
146. Trained in First Aid

(table continues)

Preliminary Round Results

147. Training on NCAA guidelines (also Conference regulations)
148. Training with stadium staff with similar stadium dynamics
149. Transportation Security Agency training, including bag searches, pat downs, suspicious activity identification
150. Transportation training in accordance with (Department of Transportation) including vehicle entry/exit strategy, road closure, traffic lights, etc.
151. Triage, CPR and first aid training
152. Triage, Emergency Medical Technician training & certifications
153. Understand role event staff plays in an emergency
154. Understanding of (NIMS) and how agencies work together
155. Understanding of all agencies that can assist in an emergency
156. Understanding of chain of command
157. Understanding of facility design options to mitigate threats
158. Understanding of how to evacuate large crowds
159. Understanding of liability associated with operating a stadium
160. Volunteer management training & leadership
161. Yearly inspection of all facilities with local law enforcement

Delphi Round 1 Findings

The eight expert panel members who participated in the preliminary Delphi round had also had a 100% response rate in Delphi Round 1. This round was delivered to each expert panel member through email utilizing an Internet survey provider in which they were asked to rank on a 5-point Likert scale *unimportant*, *of little importance*, *moderately important*, *important*, *and very important* the importance of each of the 161 standards generated in the preliminary round and to add up to an additional five qualifications that they deem important. A copy of Delphi survey Round 1 can be found in Appendix D.

Table 5 presents a descriptive analysis of Delphi Round 1 results. The expert panel found it very important to have baseline qualification Standard 25 – *create emergency plans for stadium* (4.75), along with Standard 39 – *development and*

implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc. (4.50) as the most important qualifications for stadium emergency members. Nevertheless, the panel felt that Standard 48 – *electrical safety & maintenance training in compliance (OSHA) regulations* (2.5)—and Standard 17 – *BS/BA degree in emergency management or related field* (2.63)—to be of little importance for stadium emergency managers on the NCAA Division I-A level. High mean scores indicated a high level of importance for the recommended standards, and a low standard deviation indicated a high level of consensus for that qualification.

Delphi Round 1 also afforded the members of the expert panel the opportunity to list up to an additional five qualifications that they deemed necessary for stadium emergency managers. In total, 26 additional qualifications were developed from the expert panel and were added into the Delphi survey Round 2. This portion of the Delphi study was afforded to the expert panel as a way to list additional qualifications after seeing what the seven other members of the expert panel listed as the most important qualifications for their position. The theory behind this addition was for one member to see what other members of the expert panel chose for qualifications and to be able to brainstorm even more in depth baseline qualifications for the panel to rank. Also, they would be able ultimately to compile an even greater list of qualifications before the Delphi Round 2 in which the expert panel would rank all 187 qualifications to yield the top 50 baseline qualifications to be used for the Delphi Round 3 survey.

Table 5

Delphi Round 1 Results

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
1. (CARVER) Method Training "Critically, Accessibility, Recoverability, Vulnerability, Effect, Recognizability.	8	0	3.3750	3.5000	4.00	.74402
2. (DHS) Sport Event Evacuation Training.	8	0	4.2500	4.5000	5.00	.88641
3. (DHS) Sport Event Risk Management Training.	8	0	4.3750	4.0000	4.00	.51755
4. (DHS) Sports Incident Management Training.	8	0	4.2500	4.0000	4.00	.70711
5. Ability to identify potential threats.	8	0	4.3750	4.5000	5.00	.74402
6. Able to speak, write, and give directions in multiple languages (more prudent in diverse areas of the U.S. i.e.CA).	8	0	2.7500	2.5000	2.00	.88641
7. Americans with Disabilities Act training.	8	0	3.5000	3.5000	3.00[a]	.53452

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
8. Assess stadium against Department of Homeland Security (DHS) and National Infrastructure Protection Plan (NIPP) standards.	8	0	3.3750	3.0000	3.00	.74402
9. Attend Conference to stay up to date on emergency planning.	8	0	3.1250	3.0000	3.00	.64087
10. Attend NSCS degree program for stadium security.	8	0	2.7500	3.0000	3.00	.46291
11. Attend Severe Weather preparedness training through National Weather Center.	8	0	3.3750	3.5000	4.00	.74402
12. Attend weather preparedness training through National Oceanic & Atmospheric Administration.	8	0	3.3750	3.5000	4.00	.74402
13. Be able to work closely with local law enforcement agencies.	8	0	4.1250	4.0000	4.00[a]	.83452
14. Bi Annual full scale exercises related to facility.	8	0	3.3750	3.5000	4.00	1.06066

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
15. Biological Agent Training.	8	0	3.2500	3.0000	3.00	.88641
16. Bomb threat response training.	8	0	3.5000	3.0000	3.00	.75593
17. BS/BA Degree in Emergency Management or Related Field.	8	0	2.6250	2.5000	4.00	1.30247
18. Building Science/Architectural Training.	8	0	2.8750	3.0000	2.00[a]	.83452
19. Business continuity training.	8	0	3.1250	3.0000	3.00	.99103
20. Certification in Crowd Safety Management.	8	0	3.3750	3.0000	3.00	.91613
21. Certification in emergency management from Emergency Management Institute.	8	0	2.8750	3.0000	3.00	1.24642
22. Command Staff attended FBI National Academy.	8	0	2.6250	2.0000	2.00	1.30247
23. Communication and Information and Information Management (Federal Emergency Management Agency).	8	0	3.1250	3.0000	3.00[a]	.83452

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
24. Courses through Emergency Management Institute.	8	0	3.1250	3.0000	3.00	.64087
25. Create emergency plans for stadium.	8	0	4.7500	5.0000	5.00	.46291
26. Create high functioning multi agency capable incident command system.	8	0	4.1250	4.5000	5.00	1.12599
27. Crime prevention through environmental design training.	8	0	3.1250	3.0000	3.00	.64087
28. Crisis communications training.	8	0	3.6250	3.5000	3.00	.74402
29. Crowd management planning in emergency situations – including egress, and additional shelter strategy.	8	0	4.2500	4.0000	4.00	.70711
30. Crowd Management Training.	8	0	4.3750	4.0000	4.00	.51755
31. Crowd management training and equipment for riotous crowds.	8	0	3.7500	3.5000	3.00	.88641
32. Crowd Manager "International Association of Venue Managers" (IAVM).	8	0	3.2500	3.0000	3.00	1.38873

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
33. Decisionmaking Training.	8	0	3.2500	3.5000	4.00	.88641
34. Design a tiered emergency action plan.	8	0	4.2500	4.0000	4.00	.70711
35. Detailed event/facility operations plan and layout.	8	0	4.0000	4.0000	4.00	.53452
36. Develop and Implement front line staff security/safety training.	8	0	4.2500	4.0000	4.00	.46291
37. Developed and Implement Evacuation plans/training.	8	0	4.0000	4.0000	4.00	.75593
38. Developed and Implement Mitigation plans/training.	8	0	3.8750	4.0000	4.00	.64087
39. Development & implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.	8	0	4.5000	4.5000	4.00[a]	.53452

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
40. Development of response to less common emergencies: radiological, biological, chemical, nuclear, explosives.	8	0	3.7500	4.0000	4.00	.70711
41. Dignitary Protection Training and plan for high profile guests.	8	0	3.3750	3.0000	3.00	1.18773
42. Dispatch training, command post operations with both athletics & Police Department.	8	0	3.8750	4.0000	4.00	.83452
43. E-141 Instructional Presentation and Evaluation Skills (FEMA) course.	8	0	3.0000	3.0000	2.00[a]	1.30931
44. E-146 Homeland Security Exercise and Evaluation Program certification (HSEEP) FEMA course.	8	0	3.6250	3.5000	3.00	1.06066
45. E-155 Building Design for Homeland Security (FEMA) course.	8	0	3.2500	3.5000	4.00	.88641
46. E-276 Benefit Cost Analysis (FEMA) course.	8	0	2.7500	3.0000	4.00	1.28174

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
47. E-390 Emergency Management Planning, Preparedness, Training and Education for Colleges and Universities (FEMA) course.	8	0	3.6250	4.0000	4.00	.51755
48. Electrical safety & maintenance training in compliance (OSHA) regulations.	8	0	2.5000	2.5000	2.00[a]	.92582
49. Emergency Management Training.	8	0	3.7500	4.0000	4.00	.70711
50. Emergency Manual development course.	8	0	3.6250	3.5000	3.00	1.06066
51. Emergency Medical Training.	8	0	3.3750	3.5000	4.00	.74402
52. Emergency Medical Training (awareness of system).	8	0	3.6250	4.0000	4.00	.91613
53. Emergency Operations Center Management and Operations (Federal Emergency Management Agency).	8	0	3.7500	4.0000	4.00	.88641
54. Emergency training as it applies to ADA situations.	8	0	3.7500	4.0000	4.00	.88641

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
55. Enhance emergency response and recovery operations.	8	0	3.5000	4.0000	4.00	1.06904
56. Evacuation plan and exercise.	8	0	3.7500	4.0000	4.00	.46291
57. Evaluate building shortfalls.	8	0	3.6250	4.0000	4.00	.91613
58. Evaluate communication assets and liabilities.	8	0	3.7500	4.0000	4.00	1.03510
59. Evaluate Emergency Action Plan on regular basis.	8	0	4.2500	4.0000	4.00	.46291
60. Evaluate potential technology upgrades to enhance security.	8	0	3.7500	4.0000	4.00	.46291
61. Event Commander attends FEMA Emergency Management Institute.	8	0	3.8750	4.0000	4.00	.64087
62. Experience in crowd management strategy / public assembly safety.	8	0	4.3750	4.5000	5.00	.74402
63. Experience using the Incident Management System.	8	0	4.0000	4.0000	4.00	.75593
64. Experience with Large Event Planning.	8	0	4.3750	4.5000	5.00	.74402

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
65. Facial recognition camera system and venue camera monitoring.	8	0	2.7500	3.0000	3.00	.70711
66. Familiarity with appropriate laws / regulations to reduce liability and prevent negligence.	8	0	3.1250	3.0000	3.00	.64087
67. Federal Emergency Management Agency Emergency Planning.	8	0	3.1250	3.0000	3.00	.64087
68. FEMA emergency management training.	8	0	3.5000	3.5000	3.00[a]	.53452
69. Fire Safety Code Training.	8	0	3.2500	3.0000	3.00	.70711
70. Fire Safety Training (Awareness).	8	0	3.1250	3.0000	3.00	.64087
71. First aid, CPR certification.	8	0	3.1250	3.5000	4.00	1.12599
72. Form Emergency Action Plan for each facility.	8	0	4.0000	4.0000	4.00	.75593
73. G-358 Evacuation and Reentry Planning.	8	0	3.5000	3.5000	3.00[a]	.53452

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
74. G-367 Emergency Planning for Campus Executives (DHS) course.	8	0	3.5000	3.5000	3.00[a]	.92582
75. Have all staff enrolled in self-pass wellness/physical fitness training.	8	0	2.8750	3.0000	3.00	.99103
76. Have command staff attend the Academy for Venue Safety and Security; Core Training.	8	0	3.2500	3.0000	3.00	1.16496
77. Have Event Commander Graduate as a Venue Safety and Security Manager.	8	0	3.2500	3.0000	3.00	1.28174
78. Have knowledge “best practices” from other stadia.	8	0	4.2500	4.5000	5.00	.88641
79. Hazardous Materials Awareness.	8	0	3.3750	3.0000	3.00	.51755
80. HAZMAT certification.	8	0	3.0000	3.0000	3.00	.75593
81. Health Code Training.	8	0	2.7500	3.0000	3.00	.70711
82. ICS-200 ICS for Single Resources and Initial Action Incidents (NIMS) course.	8	0	3.2500	3.0000	3.00	1.03510

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
83. ICS-100A Introduction to Incident Command System (NIMS) course.	8	0	3.5000	3.5000	3.00[a]	.92582
84. ICS-300 Intermediate Incident Command System (NIMS) course.	8	0	3.5000	3.0000	3.00	.75593
85. ICS-400 Advanced Incident Command System (NIMS) course.	8	0	3.5000	3.0000	3.00	.75593
86. ICS-700 National Incident Management System – An Introduction (NIMS) course.	8	0	3.5000	3.0000	3.00	.75593
87. ICS-800 National Response Plan – An Introduction (NIMS) course.	8	0	3.3750	3.0000	3.00	.91613
88. Identify and evaluate physical protection systems.	8	0	3.3750	3.5000	3.00[a]	1.18773
89. Identify terrorist threats and motivations.	8	0	3.2500	3.0000	3.00	.70711
90. Identify vulnerabilities in current venue setup.	8	0	3.8750	4.0000	4.00	.64087
91. Improvised Explosive Device recognition training.	8	0	3.2500	3.0000	3.00	1.03510

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
92. International Building Code familiarization.	8	0	2.7500	2.5000	2.00[a]	1.16496
93. IS-271 Anticipating Hazardous Weather and Community Risk.	8	0	3.1250	3.5000	4.00	.99103
94. Job shadow at larger venue.	8	0	3.2500	3.0000	3.00	1.03510
95. Know how to conduct emergency response plan drills.	8	0	3.3750	3.5000	4.00	.74402
96. Know how to develop a risk management plan.	8	0	4.1250	4.0000	4.00[a]	.83452
97. Know how to develop a written Emergency Response Plan.	8	0	4.1250	4.0000	4.00[a]	.83452
98. Know how to properly gauge risk level of potential threats.	8	0	4.1250	4.0000	4.00	.64087
99. Know how to train event staff on emergency management.	8	0	3.7500	4.0000	4.00	1.03510
100. Knowledge of (Department of Homeland Security) grants available.	8	0	2.6250	3.0000	3.00	.91613

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
101. Know who to contact for different emergencies.	8	0	4.0000	4.0000	4.00	.53452
102. Law Enforcement Training.	8	0	3.0000	3.0000	3.00	.75593
103. Leadership Training.	8	0	3.3750	3.5000	4.00	.74402
104. Leadership training: as it applies to emergency & disaster situations.	8	0	3.7500	4.0000	4.00	.70711
105. League (NCAA/NFL) or Sport Specific Event/Game Regulation Training.	8	0	3.6250	4.0000	4.00	.51755
106. Live-action, onsite emergency trainings covering responses to Level 1 (i.e., Contained Fire) & Level 2 (i.e. earthquake) types of emergencies – Coordinated through FEMA & Department of Homeland Security.	8	0	3.6250	3.5000	3.00	.74402
107. Master Continuity Practitioner.	8	0	3.7500	4.0000	4.00	.70711

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
108. Master's Degree in Emergency Management or Related Field.	8	0	2.7500	3.0000	3.00	1.38873
109. Multivenue/site emergency (including indoor & outdoor facilities) & crowd management training.	8	0	4.0000	4.0000	4.00	.75593
110. National Center for Spectator Sports Safety & Security – SESA system training.	8	0	3.8750	4.0000	3.00[a]	.83452
111. National Center for Spectator Sports Safety & Security – Sport Evac Training.	8	0	3.7500	3.5000	3.00	.88641
112. National Center for Spectator Sports Safety & Security – Venue staff training.	8	0	3.7500	3.5000	3.00	.88641
113. National Center for Spectator Sports Safety &Security – Professional Development Program.	8	0	3.7500	4.0000	4.00	.70711

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
114. National Center for Spectator Sports Safety & Security-Certificate Program.	8	0	3.7500	4.0000	4.00	.70711
115. National Incident Management System (NIMS) Training.	8	0	4.0000	4.0000	4.00	.53452
116. National Institute for Certification in Engineering Technologies (NICET) training (fire systems, code, alarms).	8	0	2.7500	2.5000	2.00	.88641
117. National Institute of Environmental Health Sciences (NIEHS) – Earthquake response training.	8	0	3.3750	3.5000	4.00	.74402
118. National Weather Service (NWS) Storm Spotter Training.	8	0	3.5000	4.0000	4.00	.75593
119. NCAA rules training.	8	0	3.5000	3.5000	3.00[a]	.53452
120. NFPA-1600: Standard on Disaster/Emergency Management and Business Continuity Programs.	8	0	3.6250	3.5000	3.00	.74402

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
121. Occupational Safety and Health Organization Training.	8	0	3.2500	3.0000	3.00	.88641
122. Occupational Safety and Health Organization Training compliance training.	8	0	3.3750	3.0000	3.00	.74402
123. Officer Down Training.	8	0	2.6250	2.0000	2.00	.91613
124. Physical Security Professional (PSP).	8	0	3.0000	3.0000	3.00	.75593
125. Pre event briefings; post event reviews.	8	0	4.1250	4.0000	4.00	.64087
126. Professional Continuity Practitioner.	8	0	3.2500	3.5000	4.00	.88641
127. Proper radio communication skills.	8	0	3.8750	4.0000	4.00	.64087
128. Public Relations Training.	8	0	3.7500	4.0000	4.00	.46291
129. Quarterly table top exercises.	8	0	2.8750	3.0000	3.00	.64087
130. Risk Assessment training.	8	0	4.0000	4.0000	4.00	.53452
131. Run a mock disaster drill.	8	0	3.6250	3.5000	3.00	.74402
132. Run tabletop exercises for Emergency Action Plan.	8	0	3.5000	3.5000	3.00[a]	.53452

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
133. Security Training Awareness.	8	0	3.6250	4.0000	4.00	.51755
134. SKYWARN weather spotter training (more prudent to Midwest/south regions).	8	0	3.5000	3.5000	3.00[a]	.92582
135. Sport Event Evacuation Training and Exercise "National Center for Spectator Sports Safety and Security" (NCS4).	8	0	3.8750	4.0000	4.00	.99103
136. Sport Event Risk Management (DHS) AWR-167).	8	0	3.8750	4.0000	5.00	1.12599
137. Sport Event Security Training through Southern Miss for Event Commander.	8	0	3.6250	4.0000	4.00	.91613
138. Sports and Special Events Incident Management, "The Texas Engineering Extension Service" (TEEX).	8	0	3.2500	3.0000	3.00	1.03510
139. Sports Event Evacuation and Training.	8	0	3.8750	4.0000	4.00	.64087

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
140. Surveillance and Observation Training.	8	0	3.3750	3.5000	4.00	.74402
141. Threat awareness training.	8	0	3.8750	4.0000	4.00	.64087
142. Traffic Management Training.	8	0	3.6250	3.5000	3.00	.74402
143. Train staff for proficiency in Incident Command System forms and National Incident Management System curriculum.	8	0	3.6250	3.5000	3.00	1.06066
144. Trained in Automated External Defibrillator (AED) use.	8	0	3.1250	3.0000	3.00	.99103
145. Trained in Basic Life Support.	8	0	3.1250	3.0000	3.00	.99103
146. Trained in First Aid.	8	0	3.1250	3.0000	3.00	.99103
147. Training on NCAA guidelines (also Conference regulations).	8	0	3.2500	3.0000	3.00	.46291
148. Training with stadium staff with similar stadium dynamics.	8	0	3.2500	3.5000	4.00	.88641

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
149. Transportation Security Agency training, including bag searches, pat downs suspicious activity identification.	8	0	3.2500	3.0000	3.00	.88641
150. Transportation training in accordance with (Department of Transportation) including vehicle entry/exit strategy, road closure, traffic lights, etc.	8	0	3.2500	3.0000	3.00	.70711
151. Triage, CPR and first aid training.	8	0	3.1250	3.0000	3.00	.99103
152. Triage, Emergency Medical Technician training & certifications.	8	0	3.0000	3.0000	2.00[a]	.92582
153. Understand role event staff plays in an emergency.	8	0	4.0000	4.0000	4.00	.53452
154. Understanding of (NIMS) and how agencies work together.	8	0	3.8750	4.0000	4.00	.64087
155. Understanding of all agencies that can assist in an emergency.	8	0	4.1250	4.0000	4.00[a]	.83452

(*table continues*)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
156. Understanding of chain of command.	8	0	4.0000	4.0000	4.00	.53452
157. Understanding of facility design options to mitigate threats.	8	0	4.1250	4.0000	4.00	.35355
158. Understanding of how to evacuate large crowds.	8	0	3.8750	4.0000	3.00[a]	.83452
159. Understanding of liability associated with operating a stadium.	8	0	3.5000	3.5000	3.00[a]	.53452
160. Volunteer management training & leadership.	8	0	3.0000	3.0000	3.00	.75593
161. Yearly inspection of all facilities with local law enforcement.	8	0	3.5000	3.0000	3.00	.75593

a. Multiple modes exist. The smallest value is shown

Delphi Round 2 Findings

The eight expert panel members who participated in the preliminary Delphi and Delphi Round 1, also received Delphi Round 2 with a 100% response rate. This round was delivered to each expert panel member using an online survey provider in which they were asked to rank on a 5-point Likert scale *unimportant*, *of little importance*, *moderately important*, *important*, *and very important* the importance of each of the 187 standards generated in the preliminary round and Delphi Round 1. A copy of the Delphi Round 2 survey can be found in Appendix F.

Table 6 presents a descriptive analysis of Delphi Round 2 results. The expert panel found it important to have baseline qualification Standard 25 – *create emergency plans for stadium* (4.63) as the most important qualification just as they chose in Delphi Round 1. Standard 2 – (DHS) *sport event evacuation training* (4.50) and Standard 35 – *detailed event/facility operations plan and layout* (4.50) were ranked as very important qualifications for a football stadium emergency manager as they did in Delphi Round 1. Standard 80 – *HAZMAT certification* (2.25) was rated the lowest by the expert panel this round, along with Standard 107 – *master continuity practitioner* (2.75), and Standard 81 – *health code training* (2.75) as the lowest rated qualifications for a stadium emergency manager on the NCAA Division I-A level. High mean scores indicated a high level of importance for the recommended standards and a low standard deviation indicated a high level of consensus for that qualification.

It should be highlighted that 7 of the 26 additional qualifications that the expert panel formulated in Delphi Round 1 by being given the opportunity to list an additional ≤ 5 qualifications made the ranking to be included in the final survey instrument for Delphi Round 3. My theory on the expert panel being able to develop an even greater/diverse list of qualifications would follow by the panel being afforded the opportunity to see what its fellow members listed from the preliminary round of this Delphi study. Standard 178 – *game day walk through* (4.38) was found to be an extremely important qualification, ranking as one of the highest for the final survey instrument.

Table 6

Delphi Round 2 Results

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
1. (CARVER) Method Training "Critically, Accessibility, Recoverability, Vulnerability, Effect, Recognizability.	8	0	3.5000	3.5000	3.00[a]	.53452
2. (DHS) Sport Event Evacuation Training	8	0	4.5000	4.5000	4.00[a]	.53452
3. (DHS) Sport Event Risk Management Training	8	0	4.3750	4.0000	4.00	.51755
4. (DHS) Sports Incident Management Training	8	0	3.8750	4.0000	4.00	.99103
5. Ability to identify potential threats	8	0	4.1250	4.0000	4.00	.64087
6. Able to speak, write, & give directions in multiple languages (more prudent in diverse areas of the U.S. i.e. CA)	8	0	2.8750	3.0000	3.00	.64087
7. Americans with Disabilities Act training	8	0	3.3750	3.0000	3.00	.91613
8. Assess stadium against Department of Homeland Security (DHS) and National	8	0	3.7500	3.5000	3.00	.88641
9. Attend Conference to stay up to date on emergency planning	8	0	3.5000	3.5000	3.00[a]	.92582

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
10. Attend NSCS degree program for stadium security	8	0	3.2500	3.5000	4.00	1.28174
11. Attend Severe Weather preparedness training through National Weather Center	8	0	3.7500	4.0000	4.00	.46291
12. Attend weather preparedness training through National Oceanic & Atmospheric	8	0	3.6250	4.0000	4.00	.91613
13. Be able to work closely with local law enforcement agencies	8	0	4.3750	4.0000	4.00	.51755
14. Bi Annual full scale exercises related to facility	8	0	3.8750	4.0000	3.00[a]	.83452
15. Biological Agent Training	8	0	3.1250	3.0000	3.00	.99103
16. Bomb threat response training	8	0	3.5000	3.5000	3.00[a]	.53452
17. BS/BA Degree in Emergency Management or Related Field	8	0	2.8750	3.0000	1.00	1.72689
18. Building Science/Architectural Training	8	0	3.0000	3.0000	2.00[a]	1.30931
19. Business continuity training	8	0	3.2500	3.5000	4.00	.88641
20. Certification in Crowd Safety Management	8	0	4.0000	4.0000	4.00	.75593

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
21. Certification in emergency management from Emergency Management Institute	8	0	3.3750	3.0000	3.00	1.30247
22. Command Staff attended FBI National Academy	8	0	2.8750	3.0000	4.00	1.12599
23. Communication and Information and Information Management (Federal Emergency	8	0	3.6250	4.0000	4.00	.91613
24. Courses through Emergency Management Institute	8	0	3.6250	4.0000	4.00	.91613
25. Create emergency plans for stadium	8	0	4.6250	5.0000	5.00	.51755
26. Create high functioning multi agency capable incident command system	8	0	4.2500	4.0000	4.00	.46291
27. Crime prevention through environmental design training	8	0	3.5000	3.5000	3.00[a]	.53452
28. Crisis communications training	8	0	4.0000	4.0000	4.00	.53452
29. Crowd management planning in emergency situations – including egress, & additional	8	0	4.1250	4.0000	4.00	.64087
30. Crowd Management Training	8	0	3.8750	4.0000	4.00	.35355

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
31. Crowd management training and equipment for riotous crowds	8	0	3.7500	4.0000	4.00	.70711
32. Crowd Manager & International Association of Venue Manager (IAVM)	8	0	3.1250	3.0000	3.00	.99103
33. Decisionmaking Training	8	0	3.6250	4.0000	4.00	.91613
34. Design a tiered emergency action plan	8	0	3.8750	4.0000	4.00	.64087
35. Detailed event/facility operations plan and layout	8	0	4.5000	4.5000	4.00[a]	.53452
36. Develop and Implement front line staff security/safety training	8	0	4.0000	4.0000	4.00	.53452
37. Developed and Implement Evacuation plans/training	8	0	3.8750	4.0000	4.00	.35355
38. Developed and Implement Mitigation plans/training	8	0	3.8750	4.0000	4.00	.64087
39. Development & implementation of an emergency plan from an expert panel including:	8	0	4.0000	4.0000	4.00	.53452
40. Development of response to less common emergencies: radiological, biological, chemical,	8	0	3.6250	3.5000	3.00	.74402

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
41. Dignitary Protection Training and plan for high profile guests	8	0	3.5000	3.5000	3.00[a]	.53452
42. Dispatch training, command post operations with both athletics & Police Department	8	0	3.5000	3.5000	3.00[a]	.53452
43. E-141 Instructional Presentation and Evaluation Skills (FEMA) course	8	0	3.3750	3.5000	4.00	1.06066
44. E-146 Homeland Security Exercise and Evaluation Program certification (HSEEP) FEMA course	8	0	3.6250	3.5000	3.00	1.06066
45. E-155 Building Design for Homeland Security (FEMA) course	8	0	3.3750	3.0000	3.00	.91613
46. E-276 Benefit Cost Analysis (FEMA) course	8	0	3.2500	3.5000	4.00	.88641
47. E-390 Emergency Management Planning, Preparedness, Training and Education for Colleges	8	0	3.3750	3.5000	4.00	1.06066
48. Electrical safety & maintenance training in compliance (OSHA) regulations	8	0	3.0000	3.0000	3.00	.75593

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
49. Emergency Management Training	8	0	4.5000	5.0000	5.00	.75593
50. Emergency Manual development course	8	0	3.2500	3.5000	4.00	.88641
51. Emergency Medical Training	8	0	3.1250	3.0000	3.00	.99103
52. Emergency Medical Training (awareness of system)	8	0	3.2500	3.0000	3.00	.88641
53. Emergency Operations Center Management and Operations (Federal Emergency	8	0	3.8750	4.0000	3.00[a]	.83452
54. Emergency training as it applies to ADA situations	8	0	3.6250	4.0000	4.00	.51755
55. Enhance emergency response and recovery operations	8	0	3.8750	4.0000	4.00	.64087
56. Evacuation plan and exercise	8	0	4.2500	4.0000	4.00	.70711
57. Evaluate building shortfalls	8	0	4.1250	4.0000	4.00	.35355
58. Evaluate communication assets and liabilities	8	0	3.6250	4.0000	4.00	.91613
59. Evaluate Emergency Action Plan on regular basis	8	0	4.3750	4.5000	5.00	.74402
60. Evaluate potential technology upgrades to enhance security	8	0	3.8750	4.0000	4.00	.64087

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
61. Event Commander attend FEMA Emergency Management Institute	8	0	3.8750	4.0000	4.00	.64087
62. Experience in crowd management strategy / public assembly safety	8	0	4.5000	4.5000	4.00[a]	.53452
63. Experience using the Incident Management System	8	0	4.1250	4.0000	4.00[a]	.83452
64. Experience with Large Event Planning	8	0	4.1250	4.0000	4.00	.35355
65. Facial recognition camera system and venue camera monitoring	8	0	2.8750	3.0000	2.00[a]	.83452
66. Familiarity with appropriate laws / regulations to reduce liability and prevent negligence	8	0	3.8750	4.0000	4.00	.35355
67. Federal Emergency Management Agency Emergency Planning	8	0	3.6250	3.5000	3.00	.74402
68. FEMA emergency management training	8	0	3.8750	4.0000	4.00	.64087
69. Fire Safety Code Training	8	0	3.1250	3.0000	3.00	.64087
70. Fire Safety Training (Awareness)	8	0	3.5000	4.0000	4.00	.75593
71. First aid, CPR certification	8	0	2.7500	3.0000	3.00	1.03510

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
72. Form Emergency Action Plan for each facility	8	0	4.1250	4.0000	4.00[a]	.83452
73. G-358 Evacuation and Re-entry Planning	8	0	3.3750	3.5000	4.00	.74402
74. G-367 Emergency Planning for Campus Executives (DHS) course	8	0	3.3750	3.5000	4.00	.74402
75. Have all staff enrolled in self-pass wellness/physical fitness training	8	0	3.0000	3.0000	3.00[a]	1.06904
76. Have command staff attend the Academy for Venue Safety and Security; Core Training	8	0	3.3750	3.0000	3.00	.91613
77. Have Event Commander graduate as a Venue Safety and Security Manager	8	0	3.5000	3.5000	3.00	1.30931
78. Have knowledge of best practices from other stadia	8	0	4.3750	4.5000	5.00	.74402
79. Hazardous Materials Awareness	8	0	3.6250	4.0000	4.00	.51755
80. HAZMAT certification	8	0	2.2500	2.0000	2.00	.70711
81. Health Code Training	8	0	2.7500	2.5000	2.00	.88641
82. ICS-200 ICS for Single Resources and Initial Action Incidents (NIMS) course	8	0	3.6250	3.5000	3.00	1.06066

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
83. ICS-100A Introduction to Incident Command System (NIMS) course	8	0	3.5000	3.5000	5.00	1.51186
84. ICS-300 Intermediate Incident Command System (NIMS) course	8	0	3.6250	3.5000	5.00	1.30247
85. ICS-400 Advanced Incident Command System (NIMS) course	8	0	3.2500	3.0000	3.00	1.38873
86. ICS-700 National Incident Management System – An Introduction (NIMS) course	8	0	3.5000	3.5000	2.00[a]	1.19523
87. ICS-800 National Response Plan – An Introduction (NIMS) course	8	0	3.3750	3.0000	3.00	1.18773
88. Identify and evaluate physical protection systems	8	0	3.3750	3.0000	3.00	.51755
89. Identify terrorist threats and motivations	8	0	3.7500	4.0000	4.00	.70711
90. Identify vulnerabilities in current venue setup	8	0	4.1250	4.0000	4.00	.64087
91. Improvised Explosive Device recognition training	8	0	3.7500	4.0000	4.00	.70711
92. International Building Code familiarization	8	0	3.2500	3.5000	4.00	.88641

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
93. IS-271 Anticipating Hazardous Weather and Community Risk	8	0	3.3750	3.5000	4.00	.74402
94. Job shadow at larger venue	8	0	3.6250	4.0000	4.00	.91613
95. Know how to conduct emergency response plan drills	8	0	3.7500	4.0000	4.00	.70711
96. Know how to develop a risk management plan	8	0	4.0000	4.0000	4.00	.53452
97. Know how to develop a written Emergency Response Plan	8	0	4.3750	4.0000	4.00	.51755
98. Know how to properly gauge risk level of potential threats	8	0	4.2500	4.0000	4.00	.46291
99. Know how to train event staff on emergency management	8	0	3.7500	4.0000	4.00	.46291
100. Know who to contact for different emergencies	8	0	4.5000	5.0000	5.00	.75593
101. Knowledge of (Department of Homeland Security) grants available	8	0	3.2500	3.0000	3.00	.70711
102. Law Enforcement Training	8	0	2.8750	2.5000	2.00	1.12599
103. Leadership Training	8	0	4.0000	4.0000	4.00	.92582

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
104. Leadership training: as it applies to emergency & disaster situations	8	0	3.6250	3.5000	3.00	.74402
105. League (NCAA/NFL) or Sport Specific Event/Game Regulation Training	8	0	4.1250	4.0000	4.00	.64087
106. Live-action, onsite emergency trainings covering responses to Level 1 (i.e. contained fire) & Level 2 (i.e. earthquake) types of emergencies – Coordinated through FEMA & Department of Homeland Security.	8	0	3.8750	4.0000	4.00	.64087
107. Master Continuity Practitioner	8	0	2.7500	3.0000	3.00	.46291
108. Master's Degree in Emergency Management or Related Field	8	0	2.8750	3.0000	1.00[a]	1.45774
109. Multivenue/site emergency (including indoor & outdoor facilities) & crowd management	8	0	3.8750	4.0000	4.00	.35355
110. National Center for Spectator Sports Safety & Security – SESA system training	8	0	3.7500	4.0000	4.00	.88641

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
111. National Center for Spectator Sports Safety & Security – Sport Evac Training	8	0	4.1250	4.0000	4.00[a]	.83452
112. National Center for Spectator Sports Safety & Security – Venue staff training	8	0	4.0000	4.0000	4.00	.75593
113. National Center for Spectator Sports Safety & Security –Professional Development Program	8	0	3.7500	4.0000	4.00	1.03510
114. National Center for Spectator Sports Safety & Security-Certificate Program	8	0	3.7500	4.0000	4.00	1.03510
115. National Incident Management System (NIMS) Training	8	0	3.7500	3.5000	3.00	.88641
116. National Institute for Certification in Engineering Technologies (NICET) training (fire	8	0	3.2500	3.0000	3.00	1.03510
117. National Institute of Environmental Health Sciences (NIEHS) – Earthquake response	8	0	3.0000	3.0000	3.00[a]	1.06904
118. National Weather Service (NWS) Storm Spotter Training	8	0	3.6250	3.5000	3.00	.74402
119. NCAA rules training	8	0	3.6250	4.0000	4.00	.51755

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
120. NFPA-1600: Standard on Disaster/Emergency Management and Business Continuity	8	0	3.3750	3.5000	4.00	1.06066
121. Occupational Safety and Health Organization Training	8	0	3.1250	3.0000	3.00[a]	.83452
122. Occupational Safety and Health Organization Training compliance training	8	0	3.5000	4.0000	4.00	1.06904
123. Officer Down Training	8	0	3.0000	3.0000	3.00	.75593
124. Physical Security Professional (PSP)	8	0	3.5000	3.5000	3.00[a]	.53452
125. Pre event briefings; post event reviews	8	0	4.1250	4.0000	4.00	.64087
126. Professional Continuity Practitioner	8	0	3.7500	4.0000	4.00	.70711
127. Proper radio communication skills	8	0	3.7500	3.5000	3.00	.88641
128. Public Relations Training	8	0	3.7500	4.0000	4.00	.88641
129. Quarterly table top exercises	8	0	3.2500	3.0000	3.00	1.03510
130. Risk Assessment training	8	0	3.7500	4.0000	4.00	.46291
131. Run a mock disaster drill	8	0	3.7500	4.0000	4.00	.46291
132. Run tabletop exercises for Emergency Action Plan	8	0	3.7500	4.0000	4.00	.46291

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
133. Security Training Awareness	8	0	3.8750	4.0000	4.00	.64087
134. SKYWARN weather spotter training (more prudent to Midwest/south regions)	8	0	3.5000	3.5000	3.00[a]	.92582
135. Sport Event Evacuation Training and Exercise & National Center for Spectator Sports Safety and Security" (NCS4).	8	0	4.0000	4.0000	4.00[a]	1.06904
136. Sport Event Risk Management (DHS) AWR-167)	8	0	3.8750	4.0000	4.00	.64087
137. Sport Event Security Training through Southern Miss for Event Commander	8	0	3.7500	4.0000	5.00	1.38873
138. Sports and Special Events Incident Management, & The Texas Engineering Extension	8	0	3.8750	4.0000	4.00[a]	1.24642
139. Sports Event Evacuation and Training	8	0	4.2500	4.5000	5.00	.88641
140. Surveillance and Observation Training	8	0	3.5000	3.5000	3.00[a]	.53452
141. Threat awareness training	8	0	3.8750	4.0000	4.00	.64087
142. Traffic Management Training	8	0	3.3750	3.0000	3.00	.51755

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
143. Train staff for proficiency in Incident Command System forms and National Incident Management System curriculum	8	0	3.5000	3.5000	3.00[a]	.92582
144. Trained in Automated External Defibrillator (AED) use	8	0	3.1250	3.0000	3.00	1.24642
145. Trained in Basic Life Support	8	0	3.2500	3.0000	3.00	1.03510
146. Trained in First Aid	8	0	3.5000	3.5000	5.00	1.51186
147. Training on NCAA guidelines (also Conference regulations)	8	0	3.6250	4.0000	4.00	.91613
148. Training with stadium staff with similar stadium dynamics	8	0	3.7500	4.0000	4.00	.70711
149. Transportation Security Agency training, including bag searches, pat downs, suspicious activity	8	0	3.6250	3.5000	3.00	.74402
150. Transportation training in accordance with (Department of Transportation) including vehicle entry/exit strategy, road closure, traffic lights, etc.	8	0	3.6250	4.0000	4.00	.51755

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
151. Triage, CPR and first aid training	8	0	3.2500	3.0000	3.00	1.03510
152. Triage, Emergency Medical Technician training & certifications.	8	0	3.1250	3.0000	3.00	.99103
153. Understand role event staff plays in an emergency	8	0	4.0000	4.0000	4.00	.00000
154. Understanding of (NIMS) and how agencies work together	8	0	3.5000	4.0000	4.00	1.06904
155. Understanding of all agencies that can assist in an emergency	8	0	4.2500	4.0000	4.00	.70711
156. Understanding of chain of command	8	0	4.3750	4.5000	5.00	.74402
157. Understanding of facility design options to mitigate threats	8	0	4.1250	4.0000	4.00	.64087
158. Understanding of how to evacuate large crowds	8	0	3.8750	4.0000	4.00	.64087
159. Understanding of liability associated with operating a stadium	8	0	3.7500	4.0000	4.00	.70711
160. Volunteer management training & leadership	8	0	3.2500	3.5000	4.00	.88641
161. Yearly inspection of all facilities with local law enforcement	8	0	3.7500	4.0000	4.00	.46291
162. Ability to train all game day workers on disaster preparedness	8	0	4.1250	4.0000	4.00	.64087

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
163. Ability to better identify security vulnerabilities	8	0	3.8750	4.0000	4.00	.83452
164. Practice tabletop exercises with vital personnel	8	0	3.8750	4.0000	4.00	.64087
165. More/Better communication ability	8	0	3.8750	4.0000	3.00[a]	.83452
166. Geographic Information Systems familiarity	8	0	3.2500	3.0000	3.00	.88641
167. Awareness of safe food storage and security practices	8	0	3.0000	3.0000	2.00[a]	1.30931
168. Training in crowd dynamics	8	0	3.7500	4.0000	4.00	.70711
169. Annual preseason inspections	8	0	4.1250	4.0000	4.00	.64087
170. Attend Security/Management training/conferences	8	0	3.7500	3.5000	3.00	.88641
171. Communication program to distribute and training front line personnel	8	0	3.7500	3.5000	3.00	.88641
172. Community master planning experience	8	0	3.5000	4.0000	4.00	.75593
173. Conflict resolution training	8	0	3.3750	3.0000	3.00	.51755
174. Effective background check program on front line personnel	8	0	4.0000	4.0000	4.00	.53452
175. Effective credential and access management program	8	0	4.0000	4.0000	4.00	.53452

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
176. Effective interactions with student groups	8	0	3.3750	3.5000	4.00	.74402
177. Emergency Response Training programs for front line personnel	8	0	3.8750	4.0000	4.00	.64087
178. Game day walk through	8	0	4.3750	4.5000	5.00	.74402
179. Internal emergency planning	8	0	4.0000	4.0000	4.00	.53452
180. International Association of Venue Managers Conferences	8	0	3.7500	3.5000	3.00[a]	1.16496
181. Know your agencies	8	0	4.0000	4.0000	4.00	.75593
182. Mob-mentality training.	8	0	3.8750	4.0000	4.00	.64087
183. Prior Athlete / Athletic staff / Athletic Director Experience	8	0	3.2500	3.5000	4.00	1.28174
184. Quick reference guides for staff members	8	0	3.8750	4.0000	4.00	.35355
185. Serve on stadium security advisory board	8	0	3.0000	3.0000	3.00	.75593
186. Shadow large scale events; bowl games, playoffs, etc…	8	0	3.6250	3.5000	3.00	1.06066
187. Technical awareness of incident management software	8	0	3.3750	3.0000	3.00	.51755

a. Multiple modes exist. The smallest value is shown.

As can be seen in Appendix H, I took precautionary steps to ensure to test for significant differences between means for Delphi Rounds 1 and 2 for the original 161 baseline qualifications. Of the initial 161 baseline qualifications, 95 or 59% had a positive change in mean value, while only 43 or 27% had a lower mean score when the expert panel had the opportunity to see these qualifications again in Delphi Round 2. Of the 161 baseline qualifications, 23 or 14% stayed the same with no change in between Delphi Rounds 1 and 2. It was noted that only baseline qualification 100 with a 1.9 increase of the 161 qualifications had a significant change over 1.0 point on the 5-point Likert scale. These data show that even between Delphi rounds, the expert panel members still ranked on a high level of agreement the baseline qualification standards for Delphi Rounds 1 and 2 with minimal change on the ranking scale.

As can be seen in Appendix J, I also took precautionary steps to ensure testing for significant differences between means for Delphi Rounds 2 and 3 for the top 50 qualifications among the expert panel members and that of the NCAA stadium emergency managers (*N*=42). Twenty one or 42% of the qualifications had a positive change in mean, while 29 or 58% had a negative change in mean. No significant changes were noted, showing that the expert panel view on the importance of qualifications was comparable to that of the rest of the NCAA.

Delphi Round 3 Findings

Round 3 Delphi was delivered to the rest of the NCAA Division I-A football stadium emergency managers. with a 42 or 38% choosing to participate in the final round utilizing an online survey provider through which they were asked to rank on a 5-point

Likert scale *unimportant*, *of little importance*, *moderately important*, *important*, *and very important* the top 50 baseline qualifications derived from the expert panel. Round 3 Delphi was also delivered to 82 of the final 112 stadium emergency managers through an actual mailing in an effort to achieve a high response rate. A copy of the Delphi Round 3 survey can be found in Appendix G.

Table 7 presents a descriptive analysis of Delphi Round 3 results. The NCAA Division I-A Football Stadium Emergency Managers found it very important to have baseline qualification Standard 1 – *create emergency plans for stadium* (4.62) as the most important qualification; just as the expert panel chose for the initial rounds of this Delphi study. Standard 7 – *be able to work closely with local law enforcement agencies* (4.62) and Standard 5 – *know who to contact for different emergencies* (4.60) were ranked as very important qualifications for a football stadium emergency manager to have at the NCAA Division I-A level. Standard 26 – *National Center for Spectator Sports Safety & Security - sport evac training* (3.48) was rated the lowest by the expert panel this round, along with Standard 44 – *National Center for Spectator Sports Safety & Security – venue staff training* (3.46), and Standard 33 – *certification in crowd safety management* (3.44) as the lowest rated qualifications for stadium emergency managers to have on the NCAA Division I-A level. High mean scores indicated a high level of importance for the recommended standards, and a low standard deviation indicated a high level of consensus for that qualification.

Table 7

Delphi Round 3 Results

		N		Mean	Median	Mode	Std. Deviation
		Valid	Missing				
1.	Create emergency plans for stadium	50	0	4.6200	5.0000	5.00	.49031
2.	(DHS) Sport Event Evacuation Training	50	0	3.8800	4.0000	4.00	.82413
3.	Detailed event/facility operations plan and layout	50	0	4.3400	5.0000	5.00	.77222
4.	Experience in crowd management strategy / public assembly safety	50	0	4.2200	4.0000	4.00	.70826
5.	Know who to contact for different emergencies	50	0	4.6000	5.0000	5.00	.57143
6.	(DHS) Sport Event Risk Management Training	50	0	3.7200	4.0000	4.00	.90441
7.	Be able to work closely with local law enforcement agencies	50	0	4.6200	5.0000	5.00	.49031
8.	Emergency Management Training	50	0	4.2000	4.0000	4.00	.75593
9.	Evaluate Emergency Action Plan on regular basis	50	0	4.2400	4.0000	4.00	.68690
10.	Have knowledge of best practices from other stadia	50	0	4.0400	4.0000	5.00	.90260
11.	Know how to develop and have written an Emergency Response Plan	50	0	4.1400	4.0000	4.00	.67036

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
12. Game day walk through	50	0	4.0400	4.0000	5.00	.98892
13. Create high functioning multi agency capable incident command system	50	0	4.1600	4.0000	4.00	.79179
14. Know how to properly gauge risk level of potential threats	50	0	4.0600	4.0000	4.00	.61974
15. Sports Event Evacuation and Training	50	0	3.9600	4.0000	4.00	.78142
16. Understanding of chain of command	50	0	4.3200	4.0000	4.00	.65278
17. Ability to identify potential threats	50	0	4.1600	4.0000	4.00	.71027
18. Crowd management planning in emergency situations – including egress, and additional shelter strategy	50	0	4.2600	4.0000	4.00	.66425
19. Evacuation plan and exercise	50	0	4.2000	4.0000	4.00	.67006
20. Evaluate building shortfalls	50	0	4.1200	4.0000	4.00	.65900
21. Experience using the Incident Management System	50	0	3.8800	4.0000	4.00	.82413
22. Experience with large event planning	50	0	4.1600	4.0000	4.00	.68094
23. Form emergency action plan for each facility	50	0	4.3800	4.0000	4.00	.63535

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
24. Identify vulnerabilities in current venue setup	50	0	4.2600	4.0000	4.00	.63278
25. League (NCAA/NFL) or Sport Specific Event/Game Regulation Training	50	0	3.6600	4.0000	4.00	.91718
26. National Center for Spectator Sports Safety and Security – Sport Evac Training	50	0	3.4800	3.0000	3.00	.86284
27. Preevent briefings; post event reviews	50	0	4.2800	4.0000	4.00	.64015
28. Evaluate potential technology upgrades to enhance security	50	0	3.8400	4.0000	4.00	.71027
29. Understanding of all agencies that can assist in an emergency	50	0	4.3400	4.0000	5.00	.74533
30. Understanding of facility design options to mitigate threats	50	0	3.9778	4.0000	4.00	.75593
31. Ability to train all game day workers on disaster preparedness	50	0	3.9800	4.0000	4.00	.62237
32. Annual preseason inspections	50	0	4.1000	4.0000	4.00	.88641
33. Certification in Crowd Safety Management	50	0	3.4400	3.0000	3.00	.88433
34. Crisis communications training	50	0	3.8200	4.0000	4.00	.74751

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
35. Multivenue/site emergency (including indoor and outdoor facilities) and crowd management	50	0	3.9200	4.0000	4.00	.80407
36. Develop and Implement front line staff security/safety training	50	0	4.1200	4.0000	4.00	.74615
37. Development and implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.	50	0	4.2000	4.0000	5.00	.83299
38. Developed and Implement Evacuation plans/training	50	0	4.1600	4.0000	4.00	.61809
39. Quick reference guides for staff members	50	0	4.0400	4.0000	4.00	.63760
40. Familiarity with appropriate laws / regulations to reduce liability and prevent negligence	50	0	4.0800	4.0000	4.00	.72393
41. Crowd Management training	50	0	4.0000	4.0000	4.00	.72843
42. Know how to develop a risk management plan	50	0	4.0400	4.0000	4.00	.69869

(table continues)

	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
43. Leadership Training	50	0	3.9000	4.0000	4.00	.86307
44. National Center for Spectator Sports Safety Security – Venue staff training	50	0	3.4600	3.0000	3.00	.93044
45. Sport Event Evacuation Training and Exercise National Center for Spectator Sports Safety and Security (NCS4)	50	0	3.6000	3.0000	3.00	.94761
46. Understand role event staff plays in an emergency	50	0	4.3400	4.0000	4.00	.65807
47. Effective background check program on front line personnel	50	0	3.9400	4.0000	4.00	.93481
48. Effective credential and access management program	50	0	4.2400	4.0000	4.00	.68690
49. Internal emergency planning	50	0	4.2600	4.0000	4.00	.72309
50. Know your agencies	50	0	4.2600	4.0000	4.00	.69429

Note. Multiple modes exist. The smallest value is shown

ANOVA

To fulfill project goals for the data analysis portion of this Delphi study, I had to lower the total number of job titles that the participants could choose from eight down to four to conduct the ANOVA. With a lower response rate than anticipated for certain job titles, job titles that closely resembled each other were compiled for statistical purposes in

the data analysis. After data collection stopped on February 29, 2012, the following job titles were merged:

1. Director for Facilities & Event Management merged with Senior Associate Director of Athletics.
2. Associate Athletic Director for Facilities & Operations merged with Associate Athletics Director for Operations.
3. Assistant Athletic Director for Event Management merged with Associate Athletic Director of Internal Operations.
4. University Police or Local Police Department merged with Dedicated University Emergency Manager.

Table 8 presents a descriptive analysis of the ANOVA that was conducted after the conclusion of Round 3 Delphi. Of all qualifications, 2/50 or 4% showed a significance level of less than 0.04. Standard 7 – *be able to work closely with local law enforcement agencies* (.013) and Standard 32 – *annual preseason inspections* (.016) were the only qualifications to fall below the set significance level of .04.

Table 8

ANOVA Results

			Sum of Squares	df	Mean Square	*F*	Sig.
1.	Create emergency plans for stadium	Between Groups	1.293	3	.431	1.890	.144
		Within Groups	10.487	46	.228		
		Total	11.780	49			
2.	(DHS) Sport Event Evacuation Training	Between Groups	2.734	3	.911	1.372	.263
		Within Groups	30.546	46	.664		
		Total	33.280	49			
3.	Detailed event/facility operations plan and layout	Between Groups	2.591	3	.864	1.492	.229
		Within Groups	26.629	46	.579		
		Total	29.220	49			
4.	Experience in crowd management strategy / public assembly safety	Between Groups	1.689	3	.563	1.132	.346
		Within Groups	22.891	46	.498		
		Total	24.580	49			
5.	Know who to contact for different emergencies	Between Groups	1.057	3	.352	1.085	.365
		Within Groups	14.943	46	.325		
		Total	16.000	49			
6.	(DHS) Sport Event Risk Management Training	Between Groups	1.705	3	.568	.681	.568
		Within Groups	38.375	46	.834		
		Total	40.080	49			
7.	Be able to work closely with local law enforcement agencies	Between Groups	2.423	3	.808	3.971	.013*
		Within Groups	9.357	46	.203		
		Total	11.780	49			
8.	Emergency Management Training	Between Groups	.704	3	.235	.395	.757
		Within Groups	27.296	46	.593		
		Total	28.000	49			
9.	Evaluate Emergency Action Plan on regular basis	Between Groups	1.513	3	.504	1.074	.370
		Within Groups	21.607	46	.470		
		Total	23.120	49			
10.	Have knowledge of best practices from other stadia	Between Groups	.382	3	.127	.148	.930
		Within Groups	39.538	46	.860		
		Total	39.920	49			

(table continues)

		Sum of Squares	df	Mean Square	*F*	Sig.
11. Know how to develop and have written an Emergency Response Plan	Between Groups	.844	3	.281	.611	.611
	Within Groups	21.176	46	.460		
	Total	22.020	49			
12. Game day walk through	Between Groups	2.202	3	.734	.739	.534
	Within Groups	45.718	46	.994		
	Total	47.920	49			
13. Create high functioning multi agency capable incident command system	Between Groups	.837	3	.279	.429	.733
	Within Groups	29.883	46	.650		
	Total	30.720	49			
14. Know how to properly gauge risk level of potential threats	Between Groups	.880	3	.293	.752	.527
	Within Groups	17.940	46	.390		
	Total	18.820	49			
15. Sports Event Evacuation and Training	Between Groups	.747	3	.249	.393	.759
	Within Groups	29.173	46	.634		
	Total	29.920	49			
16. Understanding of chain of command	Between Groups	.785	3	.262	.599	.619
	Within Groups	20.095	46	.437		
	Total	20.880	49			
17. Ability to identify potential threats	Between Groups	1.384	3	.461	.909	.444
	Within Groups	23.336	46	.507		
	Total	24.720	49			
18. Crowd management planning in emergency situations – including egress and additional shelter strategy	Between Groups	.634	3	.211	.463	.709
	Within Groups	20.986	46	.456		
	Total	21.620	49			
19. Evacuation plan and exercise	Between Groups	2.603	3	.868	2.058	.119
	Within Groups	19.397	46	.422		
	Total	22.000	49			
20. Evaluate building shortfalls	Between Groups	1.924	3	.641	1.524	.221
	Within Groups	19.356	46	.421		
	Total	21.280	49			
21. Experience using the Incident Management System	Between Groups	2.798	3	.933	1.407	.253
	Within Groups	30.482	46	.663		
	Total	33.280	49			

(table continues)

		Sum of Squares	df	Mean Square	*F*	Sig.
22. Experience with Large Event Planning	Between Groups	.229	3	.076	.156	.925
	Within Groups	22.491	46	.489		
	Total	22.720	49			
23. Form Emergency Action Plan for each facility	Between Groups	2.889	3	.963	2.623	.062
	Within Groups	16.891	46	.367		
	Total	19.780	49			
24. Identify vulnerabilities in current venue setup	Between Groups	.062	3	.021	.048	.986
	Within Groups	19.558	46	.425		
	Total	19.620	49			
25. League (NCAA/NFL) or Sport Specific Event/Game Regulation Training	Between Groups	.080	3	.027	.030	.993
	Within Groups	41.140	46	.894		
	Total	41.220	49			
26. National Center for Spectator Sports Safety Security – Sport Evac Training	Between Groups	.355	3	.118	.151	.929
	Within Groups	36.125	46	.785		
	Total	36.480	49			
27. Preevent briefings; post event reviews	Between Groups	1.996	3	.665	1.692	.182
	Within Groups	18.084	46	.393		
	Total	20.080	49			
28. Evaluate potential technology upgrades to enhance security	Between Groups	.145	3	.048	.090	.965
	Within Groups	24.575	46	.534		
	Total	24.720	49			
29. Understanding of all agencies that can assist in an emergency	Between Groups	1.093	3	.364	.641	.592
	Within Groups	26.127	46	.568		
	Total	27.220	49			
30. Understanding of facility design options to mitigate threats	Between Groups	.323	3	.108	.179	.910
	Within Groups	27.677	46	.602		
	Total	28.000	49			
31. Ability to train all game day workers on disaster preparedness	Between Groups	1.616	3	.539	1.427	.247
	Within Groups	17.364	46	.377		
	Total	18.980	49			

(table continues)

		Sum of Squares	df	Mean Square	*F*	Sig.
32. Annual preseason inspections	Between Groups	7.646	3	2.549	3.800	.016*
	Within Groups	30.854	46	.671		
	Total	38.500	49			
33. Certification in Crowd Safety Management	Between Groups	1.452	3	.494	.617	.608
	Within Groups	36.838	46	.801		
	Total	38.320	49			
34. Crisis communications training	Between Groups	.379	3	.126	.215	.885
	Within Groups	27.001	46	.587		
	Total	27.380	49			
35. Multivenue/site emergency (including indoor and outdoor facilities and crowd management	Between Groups	2.313	3	.771	1.208	.318
	Within Groups	29.367	46	.638		
	Total	31.680	49			
36. Develop and Implement front line staff security/safety training	Between Groups	.673	3	.224	.388	.762
	Within Groups	26.607	46	.578		
	Total	27.280	49			
37. Development and implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.	Between Groups	.784	3	.261	.362	.781
	Within Groups	33.216	46	.722		
	Total	34.000	49			
38. Developed and Implement Evacuation plans/training	Between Groups	.773	3	.258	.661	.581
	Within Groups	17.947	46	.390		
	Total	18.720	49			
39. Quick reference guides for staff members	Between Groups	1.434	3	.478	1.190	.324
	Within Groups	18.486	46	.402		
	Total	19.920	49			
40. Familiarity with appropriate laws / regulations to reduce liability and prevent negligence	Between Groups	1.917	3	.639	1.237	.307
	Within Groups	23.763	46	.517		
	Total	25.680	49			

(table continues)

			Sum of Squares	df	Mean Square	*F*	Sig.
41.	Crowd Management training	Between Groups	.323	3	.108	.193	.901
		Within Groups	25.677	46	.558		
		Total	26.000	49			
42.	Know how to develop a risk management plan	Between Groups	.877	3	.292	.584	.629
		Within Groups	23.043	46	.501		
		Total	23.920	49			
43.	Leadership Training	Between Groups	2.072	3	.691	.923	.437
		Within Groups	34.428	46	.748		
		Total	36.500	49			
44.	National Center for Spectator Sports Safety Security – Venue staff training	Between Groups	1.119	3	.373	.415	.743
		Within Groups	41.301	46	.898		
		Total	42.420	49			
45.	Sport Event Evacuation Training and Exercise National Center for Spectator Sports Safety and Security (NCS4)	Between Groups	.163	3	.054	.057	.982
		Within Groups	43.837	46	.953		
		Total	44.400	49			
46.	Understand role event staff plays in an emergency	Between Groups	1.527	3	.509	1.189	.325
		Within Groups	19.693	46	.428		
		Total	21.220	49			
47.	Effective background check program on front line personnel	Between Groups	3.450	3	1.150	1.343	.272
		Within Groups	39.370	46	.856		
		Total	42.820	49			
48.	Effective credential and access management program	Between Groups	.628	3	.209	.428	.734
		Within Groups	22.492	46	.489		
		Total	23.120	49			
49.	Internal emergency planning	Between Groups	3.057	3	1.019	2.078	.116
		Within Groups	22.563	46	.490		
		Total	25.620	49			
50.	Know your agencies	Between Groups	.922	3	.307	.623	.604
		Within Groups	22.698	46	.493		
		Total	23.620	49			

Note: * $p<.04$

Summary

The data collection, analysis, and findings produced as a result of the 50 returned surveys from the expert panel for the preliminary, first, second, and third round of this Delphi study were detailed in Chapter 4. Also included were the results for the ANOVA conducted after Round 3 Delphi. By using punctuated equilibrium while examining the raw data produced from the surveys, I was able to determine the top 50 recommended baseline qualification standards needed for NCAA Division I-A Football Stadium Emergency Managers. By using these data, he was also able to determine that the individuals filling the role of football stadium emergency managers perceive the importance of these 50 qualifications the same way.

Chapter 5: Discussion, Conclusions, and Recommendations

Overview of Study

A summary of the findings, a table of the 50 recommended baseline qualification standards, a discussion of the findings, recommendations for future research and practice, and conclusions are presented in Chapter 5. The purpose of this study was to formulate and explore baseline qualification standards needed for current and future Division I-A College football emergency managers by those who currently hold that position at the Division I-A level. To develop baseline qualification standards for NCAA Division I-A football stadium emergency managers, a volunteer expert panel consisting of eight stadium emergency managers representing eight conferences in the NCAA participated in a preliminary, first, and second round of a three-round Delphi study. The final 50 qualifications were distributed to the rest of the NCAA. There, current stadium emergency management experts had the opportunity to rank these qualifications and further strengthen them into a ranked list of importance for other stadium emergency managers to use as a guide for qualification training.

A one-way ANOVA was conducted after Round 3 with the level of significance was set at ≤ 0.04 to correct for Type I error.

Interpretation of Findings

Chapter 4 provided specific results for each survey question asked of Delphi participants; this section in Chapter 5 provides the meaning behind the findings while their relationship to the literature is explored.

Answer to Central Research Question

The central research question for this study was as follows: What baseline qualification standards are needed for NCAA Division I-A stadium emergency managers? Table 9 has research based findings on the ranking by average mean score of the top 50 baseline qualification standards needed for NCAA Division I-A stadium emergency managers.

Table 9

Top 50 Qualifications Ranked by Average Mean

Category	Mean
1. Create emergency plans for stadium	4.62
2. Be able to work closely with local law enforcement	4.62
3. Know who to contact for different emergencies	4.60
4. Form Emergency Action Plan for each facility	4.38
5. Detailed event/facility operations plan and layout	4.34
6. Understanding of all agencies that can assist in an emergency	4.34
7. Understand role event staff plays in an emergency	4.34
8. Understanding of chain of command	4.32
9. Preevent briefings; post event reviews	4.28
10. Crowd management planning in emergency situations – Including egress & additional shelter strategy	4.26
11. Identify vulnerabilities in current venue setup	4.26
12. Internal emergency planning	4.26
13. Know your agencies	4.26
14. Evaluate emergency action plan on regular basis	4.24
15. Effective credential and access management program	4.24
16. Experience in crowd management strategy / public assembly safety	4.22
17. Emergency management training	4.20
18. Evacuation plan and exercise	4.20

(table continues)

Category	Mean
19. Development & implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.	4.20
20. Create high functioning multi agency capable incident command system	4.16
21. Ability to identify potential threats	4.16
22. Experience with large event planning	4.16
23. Developed and Implement Evacuation plans/training	4.16
24. Know how to develop and have written an Emergency Response Plan	4.14
25. Evaluate building shortfalls	4.12
26. Develop and Implement front line staff security/safety training	4.12
27. Annual preseason inspections	4.10
28. Familiarity with appropriate laws /regulations to reduce liability and prevent negligence	4.08
29. Know how to properly gauge risk level of potential threats	4.06
30. Have knowledge of "best practices" from other stadia	4.04
31. Game day walk through	4.04
32. Quick reference guides for staff members	4.04
33. Know how to develop a risk management plan	4.04
34. Understanding of facility design options to mitigate threats	4.00
35. Crowd Management training	4.00
36. Ability to train all game day workers on disaster preparedness	3.98
37. Sports Event Evacuation and Training	3.96
38. Effective background check program on front line personnel	3.94
39. Multivenue/site emergency (including indoor & outdoor facilities) & crowd management	3.92

(table continues)

Category	Mean
40. Leadership Training	3.90
41. (DHS) Sport Event Evacuation Training	3.88
42. Experience using the Incident Management System	3.88
43. Evaluate potential technology upgrades to enhance security	3.84
44. Crisis communications training	3.82
45. (DHS) Sport Event Risk Management	3.72
46. League (NCAA/NFL) or Sport Specific Event/Game Regulation Training	3.66
47. Sport Event Evacuation Training and Exercise "National Center for Spectator Sports Safety and Security" (NCS4)	3.60
48. National Center for Spectator Sports Safety & Security – Sport Evac Training	3.48
49. National Center for Spectator Sports Safety & Security – Venue staff training	3.46
50. Certification in crowd safety management	3.44

Answer to Secondary Research Question

The secondary research question for this study was as follows: What is the perceived level of importance for the baseline qualification standards? With Standard 7—be able to work closely with local law enforcement agencies (.013) and Standard 32—annual preseason inspections (.016) as the only qualifications to fall below the set level of significance, the alternative hypothesis (Significant differences will exist regarding the perceived level of importance of qualifications from individuals filling the role of university stadium emergency manager) is rejected. In this case, there is a high level of

agreement on the proposed list of qualifications among those in the position of Division I-A football stadium emergency managers.

Of the total qualifications, 48/50 or 96% showed that no significant differences existed in the perception of baseline qualification standards between the merged job titles. There was a high rate of agreement on all the education and training opportunities presented to the emergency stadium managers. Standard 7—being about to work closely with local law enforcement agencies—did not have a high rate of agreement from the research participants but was still the highest mean qualification for this study.

Discussion

Although the focus on this study was on formulating baseline qualification standards for NCAA Division I-A football stadium emergency managers, it has become evident that the current generation of stadium emergency managers claims that additional training is not the most important qualification for successfully completing their job on a daily basis. The data collected *by* those *for* those who are currently employed in the field demonstrate that nothing can take the place of actual experience out in the field. The basics of being able to create one's own emergency plan, knowing whom to contact, and what agencies can assist them are shown to be more favorable qualifications than additional training, as shown in the data.

The extreme capacity of these stadia goes along with a large staff who must be qualified to handle an emergency when such an emergency arises. Being able to address these issues critically in employee training on vulnerabilities within current venues only strengthen the qualifications of the stadium emergency manager; nevertheless, this

approach can show systemic flaws. Dissemination of the current security threat at these stadia is paramount to the continued success that people have come to expect when attending large public gatherings. Therefore, the current and continual training that stadium managers and their staff receive must be up to date and in line with the current security issues that these individuals must address to the utmost of their capabilities.

It was apparent that individuals filling the security role are placed in an extremely "busy" position. It is my intention that baseline qualifications are only the beginning step as the United States moves away from the tragic events that happened on September 11, 2001 and that stasis does not become the norm regarding the additional training, qualifications, knowledge, and pure dedication to duty that these individuals take on for their respective universities.

Additional training was found important enough by the expert panel to add as one of the top 50 qualifications, yet it was ranked low by the NCAA participants. These findings do not coincide with previous research conducted by Hall (2006), Cunningham (2007), and Hall et al. (2010) in which additional training was rated as a highly viable skill to have. In the results from this study, it was found that practical experience was a higher priority for the research participants. The results from this study show that more time should be taken to invest in updated training based on what kind of training NCAA stadium managers feel they need to be most qualified in their positions. Having members of the practicing community helping to create additional training courses would only be beneficial to the career as a whole, for common knowledge would show that no one

knows more about the qualifications needed than those who participate in this activity on a daily basis.

Implications for Social Change

This research has shown many ways that social change can be achieved. Most notably, NCAA Division I-A stadium emergency managers now have a set of the top 50 baseline qualifications initially derived from an expert panel of their peers, which is compounded by the ranking of these qualifications by 38% of the other NCAA Division I-A Stadium Emergency Managers. They can use this resource within their own stadia as emergency management measures in addition to what they may already be applying. More importantly, they can determine if what they had been previously using is ineffective in addressing emergency management incidents.

With additional training qualifications ranked on the lower end by participants of this research, current courses could be changed based on results from this study. Twelve of the top 50 qualifications addressed additional training courses, and 10 of those courses were rated in the bottom 25, which showed that members of this practicing community do not rate the additional courses that are available to them as highly as they do practical experience.

The ultimate goal of this study was information sharing from a group of practicing professionals in charge of daily emergency management who are the lifeblood to the safety and security of the fans within their stands. A list of 187 baseline qualifications in addition to other recommended training was compiled in this study (see Appendix I). In a perfect world and for the safety and security of spectators watching the

most popular American sport, all 187 qualifications would be important. Even if stadium emergency managers picked and chose what qualifications fit the needs of their specific stadium and if an emergency incident is handled correctly using the four phases of emergency management, the social change inherent in this study will ultimately be a success, for the safety and security of sporting venue patrons is the top priority.

Recommendations for Action

The respondents in this study are those responsible for emergency management programs at their universities' football stadia. From the results, the following recommendations can be made:

Recommendation 1

Stadium emergency managers should work with other universities to implement as many qualifications as are practical for their specific stadium needs that they feel would enhance the emergency management program in their respective stadia. Also, individuals need to have a strong working relationship with other stadium emergency managers throughout the NCAA, with a focused approach on stadium "best practices" while using information sharing to the best of their abilities.

Recommendation 2

The stadium emergency manager should become as "well rounded" a football stadium emergency manager as possible. As demonstrated by this research, practical experience takes precedence over classroom experience in which stadium emergency managers should be well versed in all areas of stadium emergency management to become more knowledgeable stadium emergency managers/leaders. They can continue to

grow as stadium emergency management leaders because of the large number of additional training opportunities that are available; it is imperative that individuals holding such a position take advantage of every training opportunity they can find, and more importantly pass this knowledge down to members on their stadium emergency management team.

Recommendation 3

There must be interagency cooperation, coupled with direct feedback/input from the DHS and NCS4. I recommend that individuals holding this position be able to work closely with all agencies that they have at their disposal and to make staff aware of these agencies with knowledge of how to use the chain of command specifically during an emergency situation. Because of the vast resources available to stadium emergency managers, along with the feedback provided by other stadium emergency managers, it is imperative that the individual holding this position work with the DHS and the NCS4 to develop additional training seminars to focus on the needs of those in their position.

Recommendations for Further Research

Seven recommendations can be made for further research on stadium emergency management. First, this study can be replicated with participants employed at either Division II-A or III-A to compare the recommended qualifications from stadium emergency managers with data from midsize and smaller universities. With the use of smaller university/stadium capacity, new knowledge on recommended qualifications can be utilized on a very broad scale from event management starting from the local school level, all the way through the NCAA. Second, on a national level, any of the major

professional sports leagues (MLB/NFL/NBA/NHL) can benefit from results of the study as a way to network with other stadium emergency managers on what the professionals are doing to prepare their stadium emergency managers. Third, it could be determined how many in Division I-A through III-A are implementing the 50 recommended qualifications achieved in this study.

Fourth, the economic impact of a large-scale sport event incident can be accessed to justify completing the recommended baseline qualification standards. Little knowledge is available on just what the financial impact of a large scale sports venue incident would ultimately be; thus, having research based facts justifies the need for the most advanced stadium emergency manager qualification program. Fifth, a study can be conducted using stadium emergency managers from any of the NCAA football conferences to list what training they have completed to hold that position within the university. Conducting this type of study could add to the validity of this research, demonstrating that individuals holding this position may not have the baseline qualifications as calculated by their peers. Sixth, stadium managers should be consulted to provide direct input to improve the additional training courses that are available to them. With input from these individuals currently in the field, a stronger emphasis can be concentrated on the creation of superior training courses for future stadia emergency managers. Finally, a factor analysis (of the 50 baseline qualifications) can be conducted to determine if it would be more practical to reduce the total number of qualifications down to a smaller, more manageable list. Previous studies such as Hall (2006) found that a higher number of standards may have contributed to a lower total response rate, as might have been the case for this study.

Reflection on the Researcher's Experience

In the initial stages of this study, it was assumed that a specialized degree in emergency management would have been paramount to the success of the stadium emergency manager and that additional training in the art of stadium emergency management would be focused on mainly in the classroom. As I have seen throughout the research, nothing can take the place of actual experience with this kind of responsibility. With the vast number of different scenario drills that can be conducted "for training purposes," nothing can achieve what experience can achieve in terms of a successful emergency management program. The individuals who participated in this research have an immense responsibility with tens of thousands of lives at stake. At any given moment, a full scale evacuation may have to occur due to an increased security threat that many security personnel in the United States address daily. I thank them for their service because they are the ones who are behind the scenes, ensuring that their great attention to detail has ensured a safe and secure trip or the enjoyment of a sport for which Americans have such an extreme passion.

Conclusions

It is ultimately the university's responsibility to ensure that spectator security is held to the highest standards. To do that, the most qualified and experienced individuals must be the ones making key decisions in the heat of the moment when coping with other than ideal circumstances. Looking back into the four phases of emergency management, football stadium managers can prepare for and mitigate threats through their training and through exercises focused on specific emergency scenarios. Still, in the end, it will

always be how the response and recovery phase was handled when the emergency is over. NCAA Division I-A Football Stadium Emergency Managers are placed in a very difficult position, a position in which failure would be catastrophic for collegiate football, one of the most popular American sports. Hurst, Zoubek, and Pratsinakis (n.d.) stated that regardless of the analysis conducted after an incident, "the fundamental question will always be whether reasonable steps were taken to protect against an incident in light of the availability of security measures, the industry 'standards' for security, and the potential threat of terrorism" (p. 5). The goal of this study was to generate 50 baseline qualification standards for college football stadium emergency managers by allowing the most qualified individuals to formulate what qualifications *they* need to make *their* stadia more secure. This goal was achieved because stadium emergency managers now have a recommended list of qualifications derived from other stadium emergency management experts representing the entire NCAA Division I-A community, the most significant results of which are being able to work closely with local law enforcement agencies and to conduct annual preseason inspections. All managers share one ultimate goal: the safety and security of the fans filling NCAA football stadia to maximum capacity.

References

Adler, M., & Ziglo, E. (1996). *Gazing into* the *oracle*: The *Delphi Method* and *its application* to *social policy* and *public health*. London: Jessica Kingsley.

Airports Council International. (2009). World Airport Traffic Report for 2009. Retrieved from http://www.airports.org

Antee, A., & Swinburn, J. (1990). Crowd management: An issue of safety, security, and liability. *Public Management*, *72*, 16-19. Retrieved from SocINDEX.

Associated Press. (2004). *Bomb threat forces Madrid stadium evacuation*. Retrieved from http://www.foxnews.com/story/0,2933,141280,00.html

Associated Press. (2005). Tornado sirens clear stands at Iowa State. Retrieved from http://sports.espn.go.com/ncf/news/story?id=2222298

Baker, T. A., Connaughton, D. P., Zhang, J. J., & Spengler, J. O. (2007). Perceived risk of terrorism and related risk management practices of NCAA Division 1A football stadium managers. *Journal of Legal Aspects of Sport*, *17*(1), 27-51. Retrieved from http://www.thesmartjournal.com/venues.pdf

Baseball-Almanac. (2011). 1989 World Series. Retrieved from http://www.baseball-almanac.com/ws/yr1989ws.shtml

Baumgartner, F. R. (2006). Punctuated equilibrium theory and enviornmental policy. In R. Repetto (Ed.), *Punctuated equilibrium and the dynamics of U.S. enviornmental policy* (pp. 24-46). New Haven, CT: Yale University Press.

Baumgartner, F. R., & Jones, B. D. (2009). *Agendas and instability in American politics* (2nd ed.). Chicago, IL: The University of Chicago Press.

BBC. (1993). Tennis star stabbed. Retrieved from http://news.bbc.co.uk/onthisday/hi/dates/stories/april/30

Beckman, L. (2006). *A system for evaluating emergency response capabilities at a university sporting venue.* Unpublished doctoral dissertation. The University of Southern Mississippi, Hattiesburg, MS.

Berlonghi, A. E. (1990). *The special event risk management manual*. Dana Point, CA: Author.

Blanchard, W. (2007a). *What is emergency management? And what are the principles of emergency management?* Emergency Management Institute, FEMA, Department of Homeland Security. Retrieved from http://training.fema.gov/EMIWeb/edu/emprinciples.asp

Blanchard, W. (2007b). *Principles of Emergency Management*. FEMA, Department of Homeland Security. Retrieved from http://www.ndsu.edu/fileadmin/emgt/PrinciplesofEmergencyManagement.pdf

Bogdan, R. C., & Biklen, S. K. (1998). *Qualitative research for education: An introduction to theory and methods*. Needham Heights, MA: Ally & Bacon.

Camlibel, D. A. (2010). *Turkey's shifting policies toward the Kurdish issue 1984-2004: Applying puncuated equilibruim and multiple streams model of policy change* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3416904).

Canton, L. (2006). *Emergency management: Concepts and strategies for effective programs*: Hoboken, NJ: Wiley-Interscience.

Charles, C. M. (1995). *Introduction to educational research* (2nd ed.). San Diego, Longman.

Chatham Emergency Management Agency. (CEMA). (2010). *Chatham emergency operations plan.* Retrieved from http://www.chathamemergency.org/Documents/EOP%20Support%20Annex%20F%20EOC%20Staff%20Manual%20REV0410.pdf

Choi, S. (2008). Emergency management: Implications from a strategic management perspective. *Journal of Homeland Security and Emergency Management, 5*(1), 23. Retrieved from International Security & Counter Terrorism Reference Center.

CNN. (2003). At least 96 killed in nightclub inferno. Retrieved from http://articles.cnn.com/2003-02-21/us/deadly.nightclub.fire_1_attorney-general-patrick-lynch-nightclub-stampede-rhode-island-nightclub?_s=PM:US

Cobb, R.W., & Elder, C.D. (1972). *Participation in American politics*: *The dynamics of agenda-building*. Boston, MA: Allyn & Bacon, Inc.

Cohen. (1999). Woodstock rocks while Rome burns. *Rock Publication*. Retrieved from http://www.rockpublication.com/woodstock99.htm

Cunningham, G. (2007). *Security management capabilities in intercollegiate athletic departments.* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3275010).

Dixon, O. (2004, December 8). Five Pacers, seven fans charged in Palace brawl. *USA TODAY*. Retrieved from http://www.usatoday.com/sports/basketball/nba/2004-12-08-palace-brawl-charges_x.htm

Emergency Management Team. (2011). Emergency management degrees. Retrieved from http://www.emergencymgmt.com/degrees/emergency-management

E-sponder. (2008). E-Sponder Express. Retrieved from http://www.e-sponder.com/contact.htmlhttp://www.e-sponder.com/contact.html

Estell, L. (2002). A banner year for stadia? Security concerns could put an end to stadium fly-overs. *Incentive, 176*(12), 8. Retrieved from www.ebscohost.com

Federal Emergency Management Agency (FEMA). (2009). *National Incident Management System Supporting Technology Evaluation Program (NIMS STEP) Guide*. Retrieved from https://www.nimsstep.org/files/NIMS_STEP-Guide.pdf

Federal Emergency Management Agency (FEMA). (2010). FEMA History. Retrieved from http://www.fema.gov/about/history.shtm

Foran, J. (1993). Theories of revolution revisited: Toward a fourth generation? *Sociological Theory, 11*(1), 1-20. Retrieved from SocINDEX.

Francis, J. (2009). Speaker Spotlight—James Francis, CPP, CFSO. *Security Management*. Retrieved from http://www.securitymanagement.com/speaker-spotlight

Fried, G. (2005). *Managing sports facilities*. Champaign, IL: Human Kinetics.

Gersick, C. J. G. (1991). Revolutionary change theories: A multilevel exploration of the punctuated equilibrium paradigm. *Academy of Management Review, 16*(1), 10-36. Retrieved from Business Source Complete.

Givel, M. (2010).The evolution of the theoretical foundations of punctuated equilibrium theory in public policy. *Review of Policy Research,* 27(2), 187-198. Retrieved from http://works.bepress.com/michael_givel/20

Givel, M., & Glantz, S. (2001). Tobacco lobby political influence on U.S. state legislatures in the 1990s. *Tobacco Control, 10*, 124-134. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1747563

Glier, R. (2008). Storm disrupts the SEC tournament: Three games Saturday? Retrieved from http://thequad.blogs.nytimes.com/ 2008/03/14/heavy-wind-at-the-georgia-dome/

Goldstone, J. (2001). Toward a fourth generation of revolutionary theory. *American Review of Political Science, 4*, 139-187. Retrieved from Academic Search Complete.

Gould, S. J. (2007). *Punctuated equilibrium*. Cambridge, MA: Belknap Press.

Gould, S.J.; Eldridge, N. 1993: Punctuated Equilibrium Comes of Age. *Nature,* 366, 223-227.

Hagmann, D. J. (2005). Black hole in America's heartland. Retrieved from http://www.homelandsecurityus.com/site/modules/news/article.php?storyid=16

Hall, S. A., Cieslak, T., III, Marciani, L., Cooper, W., & McGee, J. A. (2010). Protective security measures for major sports events: Proposing a baseline standard. *Journal of Emergency Management, 8*(1), 9. Retrieved from http://www.cops.usdoj.gov/Publications/e07071299_web.pdf

Hall, S., Marciani, L., Cooper, W.E., & Phillips, J. (2010). Needs, concerns, and future challenges in security management of NCAA Division I football events: An intercollegiate facility management perspective. *Journal of Venue and Event Management*, *1*(2), 1-16. Retrieved from http://www.hrsm.sc.edu/jvem/Vol1No2/JVEM%20Manuscript_01.pdf

Hall, S. (2006). Effective security management of university sport venues. *The Sport Journal*, *14*, 4. Retrieved from http://www.highbeam.com/doc/1G1-191014901.html

Hurst, R., Zoubek, P., & Pratsinakis, C. (n.d.). *American sports as a target of terrorism: The duct of care after September 11th*. Retrieved from http://www.highbeam.com/doc/1G1-96845512.html

Jones, B., & Baumgartner, F. (2004). A model of choice for public policy puncuated equilibrium. *Journal of Public Administration Research and Theory*, *15*, 325-351. doi: 10.1093/jopart/mui018

Jones, B. D., Baumgartner, F. R., & True, J. L. 1998. Policy punctuations: US budget authority, 1947-95. *Journal of Politics, 60*, 1-30. Retrieved from Academic Search Alumni Edition.

Jones, B., Baumgartner, F., & True, J. (2002). *Policy macropunctuations: How the U.S. budget evolved*. Seattle, WA: Department of Political Science, University of Washington. Retrieved from http://www.unc.edu/~fbaum/papers/Budget_Evolution.pdf

KTLA. (2010). *Dozens Arrested in Violence Following Lakers Championship Win.* Retrieved from http://www.ktla.com/news/landing/ktla-lakers-security,0,2879238.story

Kuhn, T. (1996). *The structure of scientific revolutions* (3rd ed.). Chicago, IL: University of Chicago Press.

Langley, S. (2006). *Examining the effects of computer based learning and simulation on employee job performance*. Retrieved from http://www.theplatforums.com/ Files/ Examining_the_Effects_of_Computer_Based_Learning.pdf

Linstone, H. A., & Turoff, M. (1975). *The Delphi method: Techniques and applications*. Reading, MA: Addison-Wesley Publishing Company.

Madensen, T., & Eck, J. (2008). *Spectator Violence in Stadia*. Retrieved from http://www.popcenter.org/problems/pdfs/spectator_violence.pdf

Martino, J. (1983). *Technological forecasting for decision making*. New York, NY: American Elsevier.

May, P. J., Sapotichne, J., & Workman, S. (2009). Widespread policy disruption and interest mobilization. *Policy Studies Journal, 37*(4), 793-815. doi: 10.1111/j.1541-0072.2009.00335.x

Mayr, E. (1954). Change of genetic environment and evolution. In A. C. Hardy & E. B. Ford (Eds.), *Evolution as a process* (pp. 157-180). London: Allen & Unwin.

Miller, V. (2009). The worst concert tragedies in rock and roll history. *Associated Content*. Retrieved from http://www.associatedcontent.com/ article/1992344/the_worst_concert_tragedies_in_rock.html?cat=33

Miller, J., Veltri, F., & Gillentine, A. (2008). Spectator perception of security at the Super Bowl after 9/11: Implications for facility managers. *Sport Management and Related Topics Journal, 4*(2), 16-25.

National Center for Spectator Sports Safety and Security (NCS4). (n.d.). Retrieved from http://www.ncs4.com/

NCAA. (2004). Constitution, operating bylaws, and administrative bylaws. In NCAA (Ed.), *The National Collegiate Athletic Association* (p. 504).

NCAA. (2007). GUIDELINE 1d lightning safety. In NCAA (Ed.), *The National Collegiate Athletic Association* (p. 3).

Okoli, P., & Pawlowski, S. D. (2004). The Delphi method as a research tool: An example, design considerations and applications. *Information & Management*, *42*, 15-29. Retrieved from http://concordia.academia.edu/ChituOkoli/Papers/375372/The_Delphi_Method_As_a_Research_Tool_An_Example_Design_Considerations_and_Applications

Orlon, R. (2009). How to get people to take your survey. Retrieved from http://ezinearticles.com/?How-to-Get-People-to-Take-Your-Survey&id=3158189

Platt, J. (1964). Strong inference. *Science*, *146*, 347–353. Retrieved from Academic Search Complete.

Rotondi A., & Gustafson, D. (1996*).* Theoretical, methodological and practical issues arising out of the Delphi method. In M. Adler, E. Ziglio, & E. Bristol (Eds.), *Gazing into the oracle: The Delphi method and its application to social policy and public health* (pp. 34-55). Bristol, PA: Jessica Kingsley Publishers, Ltd.

Schneider, R. O. (n.d.). *A strategic overview of the "new" emergency management.* Paper. Chair, Political Science and Public Administration. University of North Carolina at Pembroke.

Schuellerman, D. (2010). GE Ingenuity Throws Dallas Cowboys Stadium to Technological Forefront. Retrieved from http://www.businesswire.com/news/home/ 20100108005403/en/GE-Ingenuity-Throws-Dallas-Cowboys-Stadium-Technological

Sebastian, E. (2007). History of emergency management: Understanding the systems that are in place to protect you during a disaster. Retrieved from http://www.associatedcontent.com/article/434975/history_of_emergency_management.html

SIMfX. (2010). *What is SIMfX?* Retrieved from http://www.simfx.com /indexabout.html

Skulmoski, G., Hartman, F., & Krahn, J. (2007). The Delphi Method for graduate research. *Journal of Information Technology Education, 6*, 21. Retrieved from http://jite.org/documents/Vol6/JITEv6p001-021Skulmoski212.pdf

Steneck, N. H. (2007). *Introduction to the responsible conduct of research*. Retrieved from http://ori.hhs.gov/documents/rcrintro.pdf

Stoller, G. (2005, 29 October). Mounting evacuations add to fliers' list of frustrations. *USA TODAY*. Retrieved from http://www.usatoday.com/travel/news/2005-05-10-evacuations-usat_x.htm

True, J. L., Jones, B. D., & Baumgartner, F. R. (2006). Punctuated-equilibrium theory: Explaining stability and change in public policymaking. In P. Sabatier (Ed.),

Theories of the Policy Process (2nd ed.) (ch. 6, pp. 155-188). Boulder, CO: Westview Press.

U. S. Department of Homeland Security. (2008, December). National incident management system. Retrieved from http://www.fema.gov/pdf/emergency/nims/NIMS_core.pdf

U. S. Department of Homeland Security. (2010). SportEvac: Choreographing a Stadium Stampede. Retrieved from http://www.dhs.gov/files/programs/gc_1268329363175.shtm

U. S. Department of Justice. (2002). *Crisis Information Management Software (CIMS) Feature Comparison Report*. Washington, DC: Department of Justice.

Vavrek, R. J., Kithil, R., Holle, R. L., Allsopp, J., & Cooper, M. A. (2011, Oct 9). The science of thunder. Retrieved from http://www.lightningsafety.com/nlsi_info/thunder2.html

Wieberg, S. (2005). Colleges are reaching their limit on alcohol. *USA Today*. Retrieved from http://www.usatoday.com/news/nation/2005-11-16-colleges-alcohol_x.htm

Winter, G. (2000). A comparative discussion of the notion of validity in qualitative and quantitative research. *The Qualitative Report*, *4*, 3-4. Retrieved from http://www.nova.edu/ssss/QR/QR4-3/winter.html

Wong, W. (2009). Home sweet dome. *Biz Tech Magazine*. Retrieved from http://www.biztechmagazine.com/article/2009/06/home-sweet-dome

Appendix A: Expert Panel Invitation to Participate Letter

The intent of this letter is to invite you to serve on an expert panel of NCAA Division I-A football stadium emergency managers. The purpose of this study is to explore the baseline qualification standards needed for current and future Division I-A football stadium emergency managers. Establishing such qualifications will provide consistency in emergency management practices among the NCAA Division I-A sporting venues throughout America.

To qualify to serve on the expert panel you are required to be the individual who is responsible for your universities football stadium emergency management program. The preliminary round of this internet survey will consist of having eight stadium emergency management experts reveal what they believe to be the most important qualifications for football stadium emergency managers. You will be asked to list 25 baseline qualifications based off the open ended question: **"What baseline qualification standards are needed for NCAA Division I-A stadium emergency managers?"**

For the first round of this internet survey, the expert panel will review and rank the qualifications needed for stadium emergency management positions on a five point scale and add five more qualification standards that they deem appropriate. To avoid redundancy, any duplicates of recommended qualifications will be removed throughout the study.

The second round of this internet survey will ask you to rank on a five point scale the list of recommended baseline qualifications, to provide which university position most closely resembles yours, and finally to provide any additional training that your

university participates in. **After participating in the Round 2 internet survey the expert panel's participation in this study will be completed.**

For the final round of this study a completed list originating from the expert panel of the top 50 stadium emergency manager recommendations will be included in the round 3 internet survey that will be delivered to all other Division I-A football stadium emergency managers in which they will be asked to rate on a five point scale the top 50 recommendations from the expert panel.

If you accept this invitation to participate you will be an essential aspect of this dissertation study, as you will essentially be helping to create the final survey instrument of the top 50 recommended qualifications that will be delivered to the rest of the NCAA.

Please respond by Wednesday, December 7, 2011 if you meet the qualifications and would like to serve on the expert panel, please email or call me.

Thank you so much for your time and your consideration

Joshua R. Hoogstra

Appendix B: Preliminary Round Survey

The purpose of this study is to formulate baseline qualification standards for NCAA Division I-A football stadium emergency managers.

Please answer the following questions:

1. University Name?

   _____

2. What baseline qualification standards are needed for NCAA Division I-A stadium emergency managers?

Please list 25 qualifications as this is very important to the total number of qualifications generated from this study.

Examples could include the following types of answers:

1. Certificate in emergency management
2. Having developed and implemented training procedures and strategies for radiological protection, detection, and decontamination
3. "Specific" courses from the Emergency Management Institute
4. NIMS training
5. Having developed and performed tests and evaluations of emergency management plans

Please be as creative as you can be without consideration of the financial aspect of training. The goal is to formulate the most diverse/best list of baseline qualifications that

you as the expert panel can generate. Try and think outside the box where you have just been given the green light to send your entire staff to any additional training that you have always wanted; yet would never be able to for budgetary reasons. For the purpose of this study you have no budget and are afforded the opportunity to produce the most highly qualified game day football stadium emergency managers. Please list the required training that they need; so they can be qualified to the highest possible level they can be!

1. _____

2. _____

3. _____

4. _____

5. _____

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23. _____

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25. _____

Appendix C: Expert Panel Round 1 Letter

Dear Participants:

Thank you for your participation in compiling a list of 161 baseline qualification standards that will be used as the starting point for this study. We are now moving on to the next phase with Round 1!

The main purpose of the first round of the study is to have the selected panel review and rank on a five point scale the qualifications needed for stadium emergency management positions, and to add five qualification standards that they deem appropriate. To avoid redundancy, any duplicates of recommended qualifications will be removed throughout the study, so I ask you to please "think outside of the box" when listing an additional five qualification standards. Such original answers will ultimately create a more diverse group of qualifications coming from the expert panel.

Attached is a survey link that will take you to the Round 1 survey that should take no more than 15-20 minutes to complete. I realize your time is very valuable; but you must know how much I appreciate your help with this study. If your time permits, I request that you complete the attached survey within one week from today.

Again, I thank you so much for your time and effort in assisting me with this study. As always, if you have any related questions, please do not hesitate to call or email me, and I will gladly address any questions or concerns.

Yours sincerely,

Joshua Hoogstra

Please click on link to enter the survey

Appendix D: Round 1 Survey

Round 1 survey's are being delivered to the same expert panel and consist of the 161 recommended qualifications that were created by yourself and the other members of the expert panel. After rating these baseline qualifications on the following 5-point scale you will be afforded the opportunity to list an additional 5 qualifications that might have originated from seeing the other panel members' lists of recommended qualifications. All duplicate answers from the preliminary round have been removed for redundancy purposes. As you may notice many of the qualifications might sound a little similar to one another, this is where I ask you; the exert panel to choose the qualification that sounds the best to use as the baseline qualification that will be used in the final round of this study, ultimately sent to the rest of the NCAA Division I-A Football Stadium Emergency Managers.

#1 **University Name** _____

#2 **Please rate the importance of the following recommended baseline NCAA Division I-A Stadium Emergency Manager qualifications.**

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
(CARVER) Method Training "Critically, Accessibility, Recoverability, Vulnerability, Effect, Recognizability"	o	o	o	o	o
(DHS) Sport Event Evacuation Training	o	o	o	o	o
(DHS) Sport Event Risk Management Training	o	o	o	o	o
(DHS) Sports Incident Management Training	o	o	o	o	o
Ability to identify potential threats	o	o	o	o	o
Able to speak, write, & give directions in multiple languages (more prudent in diverse areas of the U.S., i.e., Canada	o	o	o	o	o
Americans with Disabilities Act training	o	o	o	o	o
Assess stadium against Department of Homeland Security (DHS) and National Infrastructure Protection Plan (NIPP) standards	o	o	o	o	o
Attend Conference to stay up to date on emergency planning	o	o	o	o	o
Attend NSCS degree program for stadium security	o	o	o	o	o
Attend Severe Weather preparedness training through National Weather Center	o	o	o	o	o
Attend weather preparedness training through National Oceanic & Atmospheric Administration	o	o	o	o	o
Be able to work closely with local law enforcement agencies	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Bi Annual full scale exercises related to facility	o	o	o	o	o
Biological Agent Training	o	o	o	o	o
Bomb threat response training	o	o	o	o	o
BS/BA Degree in Emergency Management or Related Field	o	o	o	o	o
Building Science/Architectural Training	o	o	o	o	o
Business continuity training	o	o	o	o	o
Certification in Crowd Safety Management	o	o	o	o	o
Certification in emergency management from Emergency Management Institute	o	o	o	o	o
Command Staff attended FBI National Academy	o	o	o	o	o
Communication and Information and Information Management (Federal Emergency Management Agency)	o	o	o	o	o
Courses through Emergency Management Institute	o	o	o	o	o
Create emergency plans for stadium	o	o	o	o	o
Create high functioning multi agency capable incident command system	o	o	o	o	o
Crime prevention through environmental design training	o	o	o	o	o
Crisis communications training	o	o	o	o	o
Crowd management planning in emergency situations – including egress, & additional shelter strategy	o	o	o	o	o
Crowd Management Training	o	o	o	o	o
Crowd management training and equipment for riotous crowds	o	o	o	o	o
Crowd Manager "International Association of Venue Managers" (IAVM)	o	o	o	o	o
Decisionmaking Training	o	o	o	o	o
Design a tiered emergency action plan	o	o	o	o	o
Detailed event/facility operations plan and layout	o	o	o	o	o
Develop and Implement front line staff security/safety training	o	o	o	o	o
Developed and Implement Evacuation plans/training	o	o	o	o	o
Developed and Implement Mitigation plans/training	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Development & implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.	o	o	o	o	o
Development of response to less common emergencies: radiological, biological, chemical, nuclear, explosives	o	o	o	o	o
Dignitary Protection Training and plan for high profile guests	o	o	o	o	o
Dispatch training, command post operations with both athletics & Police Department	o	o	o	o	o
E-141 Instructional Presentation and Evaluation Skills (FEMA) course	o	o	o	o	o
E-146 Homeland Security Exercise and Evaluation Program certification (HSEEP) FEMA course	o	o	o	o	o
E-155 Building Design for Homeland Security (FEMA) course	o	o	o	o	o
E-276 Benefit Cost Analysis (FEMA) course	o	o	o	o	o
E-390 Emergency Management Planning, Preparedness, Training and Education for Colleges and Universities (FEMA) course	o	o	o	o	o
Electrical safety & maintenance training in compliance (OSHA) regulations	o	o	o	o	o
Emergency Management Training	o	o	o	o	o
Emergency Manual development course	o	o	o	o	o
Emergency Medical Training	o	o	o	o	o
Emergency Medical Training (awareness of system)	o	o	o	o	o
Emergency Operations Center Management and Operations (Federal Emergency Management Agency)	o	o	o	o	o
Emergency training as it applies to ADA situations	o	o	o	o	o
Enhance emergency response and recovery operations	o	o	o	o	o
Evacuation plan and exercise	o	o	o	o	o
Evaluate building shortfalls	o	o	o	o	o
Evaluate communication assets and liabilities	o	o	o	o	o
Evaluate Emergency Action Plan on regular basis	o	o	o	o	o
Evaluate potential technology upgrades to enhance security	o	o	o	o	o
Event Commander attend FEMA Emergency Management Institute	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Experience in crowd management strategy / public assembly safety	o	o	o	o	o
Experience using the Incident Management System	o	o	o	o	o
Experience with Large Event Planning	o	o	o	o	o
Facial recognition camera system and venue camera monitoring	o	o	o	o	o
Familiarity with appropriate laws / regulations to reduce liability and prevent negligence	o	o	o	o	o
Federal Emergency Management Agency Emergency Planning	o	o	o	o	o
FEMA emergency management training	o	o	o	o	o
Fire Safety Code Training	o	o	o	o	o
Fire Safety Training (Awareness)	o	o	o	o	o
First aid, CPR certification	o	o	o	o	o
Form Emergency Action Plan for each facility	o	o	o	o	o
G-358 Evacuation and Reentry Planning	o	o	o	o	o
G-367 Emergency Planning for Campus Executives (DHS) course	o	o	o	o	o
Have all staff enrolled in self-pass wellness/physical fitness training	o	o	o	o	o
Have command staff attend the Academy for Venue Safety and Security; Core Training	o	o	o	o	o
Have Event Commander graduate as a Venue Safety and Security Manager	o	o	o	o	o
Have knowledge of "best practices" from other stadia	o	o	o	o	o
Hazardous Materials Awareness	o	o	o	o	o
HAZMAT certification	o	o	o	o	o
Health Code Training	o	o	o	o	o
ICS-200 ICS for Single Resources and Initial Action Incidents (NIMS) course	o	o	o	o	o
ICS-100A Introduction to Incident Command System (NIMS) course I	o	o	o	o	o
CS-300 Intermediate Incident Command System (NIMS) course	o	o	o	o	o
ICS-400 Advanced Incident Command System (NIMS) course	o	o	o	o	o
ICS-700 National Incident Management System – An Introduction (NIMS) course	o	o	o	o	o
ICS-800 National Response Plan – An Introduction (NIMS) course	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Identify and evaluate physical protection systems	o	o	o	o	o
Identify terrorist threats and motivations	o	o	o	o	o
Identify vulnerabilities in current venue setup	o	o	o	o	o
Improvised Explosive Device recognition training	o	o	o	o	o
International Building Code familiarization	o	o	o	o	o
S-271 Anticipating Hazardous Weather and Community Risk	o	o	o	o	o
Job shadow at larger venue	o	o	o	o	o
Know how to conduct emergency response plan drills	o	o	o	o	o
Know how to develop a risk management plan	o	o	o	o	o
Know how to develop a written Emergency Response Plan	o	o	o	o	o
Know how to properly gauge risk level of potential threats	o	o	o	o	o
Know how to train event staff on emergency management	o	o	o	o	o
Know who to contact for different emergencies	o	o	o	o	o
Knowledge of (Department of Homeland Security) grants available	o	o	o	o	o
Law Enforcement Training	o	o	o	o	o
Leadership Training	o	o	o	o	o
Leadership training: as it applies to emergency & disaster situations	o	o	o	o	o
League (NCAA/NFL) or Sport Specific Event/Game Regulation Training	o	o	o	o	o
Live-action, onsite emergency trainings covering responses to Level 1 (i.e. contained fire) & Level 2 (i.e. earthquake) types of emergencies – Coordinated through FEMA & Department of Homeland Security Master Continuity Practitioner	o	o	o	o	o
Master's Degree in Emergency Management or Related Field	o	o	o	o	o
Multivenue/site emergency (including indoor & outdoor facilities) & crowd management training	o	o	o	o	o
National Center for Spectator Sports Safety & Security – SESA system training	o	o	o	o	o
National Center for Spectator Sports Safety & Security – Sport Evac Training	o	o	o	o	o
National Center for Spectator Sports Safety & Security – Venue staff training	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
National Center for Spectator Sports Safety & Security – Professional Development Program	o	o	o	o	o
National Center for Spectator Sports Safety & Security-Certificate Program	o	o	o	o	o
National Incident Management System (NIMS) Training	o	o	o	o	o
National Institute for Certification in Engineering Technologies (NICET) training (fire systems, code, alarms)	o	o	o	o	o
National Institute of Environmental Health Sciences (NIEHS) – Earthquake response	o	o	o	o	o
National Weather Service (NWS) Storm Spotter Training	o	o	o	o	o
NCAA rules training	o	o	o	o	o
NFPA-1600: Standard on Disaster/Emergency Management and Business Continuity Programs	o	o	o	o	o
Occupational Safety and Health Organization Training	o	o	o	o	o
Occupational Safety and Health Organization Training compliance training	o	o	o	o	o
Officer Down Training	o	o	o	o	o
Physical Security Professional (PSP)	o	o	o	o	o
Pre event briefings; post event reviews	o	o	o	o	o
Professional Continuity Practitioner	o	o	o	o	o
Proper radio communication skills	o	o	o	o	o
Public Relations Training	o	o	o	o	o
Quarterly table top exercises	o	o	o	o	o
Risk Assessment training	o	o	o	o	o
Run a mock disaster drill	o	o	o	o	o
Run tabletop exercises for Emergency Action Plan	o	o	o	o	o
Security Training Awareness	o	o	o	o	o
SKYWARN weather spotter training (more prudent to midwest/south regions)	o	o	o	o	o
Sport Event Evacuation Training and Exercise "National Center for Spectator Sports Safety and Security" (NCS4)	o	o	o	o	o
Sport Event Risk Management (DHS) AWR-167)	o	o	o	o	o
Sport Event Security Training through Southern Miss for Event Commander	o	o	o	o	o
Sports and Special Events Incident Management, "The Texas Engineering Extension Service" (TEEX)	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Sports Event Evacuation and Training	o	o	o	o	o
Surveillance and Observation Training	o	o	o	o	o
Threat awareness training	o	o	o	o	o
Traffic Management Training	o	o	o	o	o
Train staff for proficiency in Incident Command System forms and National Incident Management System curriculum	o	o	o	o	o
Trained in Automated External Defibrillator (AED) use	o	o	o	o	o
Trained in Basic Life Support	o	o	o	o	o
Trained in First Aid	o	o	o	o	o
Training on NCAA guidelines (also Conference regulations)	o	o	o	o	o
Training with stadium staff with similar stadium dynamics	o	o	o	o	o
Transportation Security Agency training, including bag searches, pat downs, suspicious activity identification	o	o	o	o	o
Transportation training in accordance with (Department of Transportation) including vehicle entry/exit strategy, road closure, traffic lights, etc.	o	o	o	o	o
Triage, CPR and first aid training	o	o	o	o	o
Triage, Emergency Medical Technician training & certifications	o	o	o	o	o
Understand role event staff plays in an emergency	o	o	o	o	o
Understanding of (NIMS) and how agencies work together	o	o	o	o	o
Understanding of all agencies that can assist in an emergency	o	o	o	o	o
Understanding of chain of command	o	o	o	o	o
Understanding of facility design options to mitigate threats	o	o	o	o	o
Understanding of how to evacuate large crowds	o	o	o	o	o
Understanding of liability associated with operating a stadium	o	o	o	o	o
Volunteer management training & leadership	o	o	o	o	o
Yearly inspection of all facilities with local law enforcement	o	o	o	o	o

Appendix E: Expert Panel Round 2 Letter

Dear Participants:

Thank you for your participation thus far in compiling a list of 187 baseline qualification standards. We are now moving on to the next, and your final phase of this study with Round 2!

The goal of the second round of this study is to have the expert panel review and rank on a five point scale the qualifications needed for stadium emergency management positions, choose from a list of job titles that most closely resembles that of your own, and finally to list any seminars, web training, or anything above and beyond that you do at your university to be tallied in a final list to distribute to the rest of the NCAA.

Attached is a survey link that will take you to the Round 2 survey that should take no more than 15-20 minutes to complete. I realize your time is very valuable; but you must know how much I appreciate your help with this study. If your time permits, I request that you complete the attached survey within one week from today.

Again, I thank you so much for your time and effort in assisting me with this study. As always, if you have any related questions, please do not hesitate to call or email me, and I will gladly address any questions or concerns.

Yours sincerely,

Joshua Hoogstra

Please click on link to enter the survey:

Appendix F: Round 2 Survey

Round 2 surveys are being delivered to the same expert panel as the previous rounds and consist of the 161 original recommended qualifications that were created by you, along with 26 additional responses from the eight members of the expert panel from Round 1. All duplicate answers have been removed for redundancy purposes. Please remember this is the last part of this study for the expert panel and the rating scale is very important, so whatever you feel are the top 50 recommended qualifications needed rate them as that as this will be the final survey instrument that will be delivered to the rest of the NCAA Division I-A Stadium Emergency Managers.

#1 **University Name** _____

#2 **Please choose from the list of job titles that most closely resembles your job title at your university.**

- Director for Facilities & Event Management
- Associate Athletic Director for Facilities & Operations
- Assistant Athletic Director for Event Management
- Senior Associate Director of Athletics
- Associate Athletics Director for Operations
- University Police or Local Police Department
- Associate Athletic Director of Internal Operations
- Dedicated University Emergency Manager

#3 **Please rate the importance of the following recommended baseline NCAA Division I-A Stadium Emergency Manager qualifications.**

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
(CARVER) Method Training "Critically, Accessibility, Recoverability, Vulnerability, Effect, Recognizability"	o	o	o	o	o
(DHS) Sport Event Evacuation Training	o	o	o	o	o
(DHS) Sport Event Risk Management Training	o	o	o	o	o
(DHS) Sports Incident Management Training	o	o	o	o	o
Ability to identify potential threats	o	o	o	o	o
Able to speak, write, & give directions in multiple languages (more prudent in diverse areas of the U.S. i.e. CA	o	o	o	o	o
Americans with Disabilities Act training	o	o	o	o	o
Assess stadium against Department of Homeland Security (DHS) and National Infrastructure Protection Plan (NIPP) standards	o	o	o	o	o
Attend Conference to stay up to date on emergency planning	o	o	o	o	o
Attend NSCS degree program for stadium security	o	o	o	o	o
Attend Severe Weather preparedness training through National Weather Center	o	o	o	o	o
Attend weather preparedness training through National Oceanic & Atmospheric Administration	o	o	o	o	o
Be able to work closely with local law enforcement agencies	o	o	o	o	o
Bi Annual full scale exercises related to facility	o	o	o	o	o
Biological Agent Training	o	o	o	o	o
Bomb threat response training	o	o	o	o	o
BS/BA Degree in Emergency Management or Related Field	o	o	o	o	o
Building Science/Architectural Training	o	o	o	o	o
Business continuity training	o	o	o	o	o
Certification in Crowd Safety Management	o	o	o	o	o
Certification in emergency management from Emergency Management Institute	o	o	o	o	o
Command Staff attended FBI National Academy	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Communication and Information and Information Management (Federal Emergency Management Agency)	o	o	o	o	o
Courses through Emergency Management Institute	o	o	o	o	o
Create emergency plans for stadium	o	o	o	o	o
Create high functioning multi agency capable incident command system	o	o	o	o	o
Crime prevention through environmental design training	o	o	o	o	o
Crisis communications training	o	o	o	o	o
Crowd management planning in emergency situations – including egress, & additional shelter strategy	o	o	o	o	o
Crowd Management Training	o	o	o	o	o
Crowd management training and equipment for riotous crowds	o	o	o	o	o
Crowd Manager "International Association of Venue Managers" (IAVM)	o	o	o	o	o
Decisionmaking Training	o	o	o	o	o
Design a tiered emergency action plan	o	o	o	o	o
Detailed event/facility operations plan and layout	o	o	o	o	o
Develop and Implement front line staff security/safety training	o	o	o	o	o
Developed and Implement Evacuation plans/training	o	o	o	o	o
Developed and Implement Mitigation plans/training	o	o	o	o	o
Development & implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.	o	o	o	o	o
Development of response to less common emergencies: radiological, biological, chemical, nuclear, explosives	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Dignitary Protection Training and plan for high profile guests	o	o	o	o	o
Dispatch training, command post operations with both athletics & Police Department	o	o	o	o	o
E-141 Instructional Presentation and Evaluation Skills (FEMA) course	o	o	o	o	o
E-155 Building Design for Homeland Security (FEMA) course	o	o	o	o	o
E-276 Benefit Cost Analysis (FEMA) course	o	o	o	o	o
E-390 Emergency Management Planning, Preparedness, Training and Education for Colleges and Universities (FEMA) course	o	o	o	o	o
Electrical safety & maintenance training in compliance (OSHA) regulations	o	o	o	o	o
Emergency Management Training	o	o	o	o	o
Emergency Manual development course	o	o	o	o	o
Emergency Medical Training	o	o	o	o	o
Emergency Medical Training (awareness of system)	o	o	o	o	o
Emergency Operations Center Management and Operations (Federal Emergency Management Agency)	o	o	o	o	o
Emergency training as it applies to ADA situations	o	o	o	o	o
Enhance emergency response and recovery operations	o	o	o	o	o
Evacuation plan and exercise	o	o	o	o	o
Evaluate building shortfalls	o	o	o	o	o
Evaluate communication assets and liabilities	o	o	o	o	o
Evaluate Emergency Action Plan on regular basis	o	o	o	o	o
Evaluate potential technology upgrades to enhance security	o	o	o	o	o
Event Commander attend FEMA Emergency Management Institute	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Experience in crowd management strategy / public assembly safety	o	o	o	o	o
Experience using the Incident Management System	o	o	o	o	o
Experience with Large Event Planning	o	o	o	o	o
Facial recognition camera system and venue camera monitoring	o	o	o	o	o
Familiarity with appropriate laws / regulations to reduce liability and prevent negligence	o	o	o	o	o
Federal Emergency Management Agency Emergency Planning	o	o	o	o	o
FEMA emergency management training	o	o	o	o	o
Fire Safety Code Training	o	o	o	o	o
Fire Safety Training (Awareness)	o	o	o	o	o
First aid, CPR certification	o	o	o	o	o
Form Emergency Action Plan for each facility	o	o	o	o	o
G-358 Evacuation and Reentry Planning	o	o	o	o	o
G-367 Emergency Planning for Campus Executives (DHS) course	o	o	o	o	o
Have all staff enrolled in self-pass wellness/physical fitness training	o	o	o	o	o
Have command staff attend the Academy for Venue Safety and Security; Core Training	o	o	o	o	o
Have Event Commander graduate as a Venue Safety and Security Manager	o	o	o	o	o
Have knowledge of "best practices" from other stadia	o	o	o	o	o
Hazardous Materials Awareness	o	o	o	o	o
HAZMAT certification	o	o	o	o	o
Health Code Training	o	o	o	o	o
ICS-200 ICS for Single Resources and Initial Action Incidents (NIMS) course	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
ICS-100A Introduction to Incident Command System (NIMS) course	o	o	o	o	o
ICS-300 Intermediate Incident Command System (NIMS) course	o	o	o	o	o
ICS-400 Advanced Incident Command System (NIMS) course	o	o	o	o	o
ICS-700 National Incident Management System – An Introduction (NIMS) course	o	o	o	o	o
ICS-800 National Response Plan – An Introduction (NIMS) course	o	o	o	o	o
Identify and evaluate physical protection systems	o	o	o	o	o
Identify terrorist threats and motivations	o	o	o	o	o
Identify vulnerabilities in current venue setup	o	o	o	o	o
Improvised Explosive Device recognition training	o	o	o	o	o
International Building Code familiarization	o	o	o	o	o
IS-271 Anticipating Hazardous Weather and Community Risk	o	o	o	o	o
Job shadow at larger venue	o	o	o	o	o
Know how to conduct emergency response plan drills	o	o	o	o	o
Know how to develop a risk management plan	o	o	o	o	o
Know how to develop a written Emergency Response Plan	o	o	o	o	o
Know how to properly gauge risk level of potential threats	o	o	o	o	o
Know how to train event staff on emergency management	o	o	o	o	o
Know who to contact for different emergencies	o	o	o	o	o
Knowledge of (Department of Homeland Security) grants available	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Law Enforcement Training	o	o	o	o	o
Leadership Training	o	o	o	o	o
Leadership training: as it applies to emergency & disaster situations	o	o	o	o	o
League (NCAA/NFL) or Sport Specific Event/Game Regulation Training	o	o	o	o	o
Live-action, onsite emergency trainings covering responses to Level 1 (i.e. contained fire) & Level 2 (i.e. earthquake) types of emergencies – Coordinated through FEMA & Department of Homeland Security	o	o	o	o	o
Master Continuity Practitioner	o	o	o	o	o
Master's Degree in Emergency Management or Related Field	o	o	o	o	o
Multivenue/site emergency (including indoor & outdoor facilities) & crowd management training	o	o	o	o	o
National Center for Spectator Sports Safety & Security – SESA system training	o	o	o	o	o
National Center for Spectator Sports Safety & Security – Sport Evac Training	o	o	o	o	o
National Center for Spectator Sports Safety & Security – Venue staff training	o	o	o	o	o
National Center for Spectator Sports Safety & Security – Professional Development Program	o	o	o	o	o
National Center for Spectator Sports Safety & Security-Certificate Program	o	o	o	o	o
National Incident Management System (NIMS) Training	o	o	o	o	o
National Institute for Certification in Engineering Technologies (NICET) training (fire systems, code, alarms)	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
National Institute of Environmental Health Sciences (NIEHS) – Earthquake response training	o	o	o	o	o
National Weather Service (NWS) Storm Spotter Training	o	o	o	o	o
NCAA rules training	o	o	o	o	o
NFPA-1600: Standard on Disaster/Emergency Management and Business Continuity Programs	o	o	o	o	o
Occupational Safety and Health Organization Training	o	o	o	o	o
Occupational Safety and Health Organization Training compliance training	o	o	o	o	o
Officer Down Training	o	o	o	o	o
Physical Security Professional (PSP)	o	o	o	o	o
Pre event briefings; post event reviews	o	o	o	o	o
Professional Continuity Practitioner	o	o	o	o	o
Proper radio communication skills	o	o	o	o	o
Public Relations Training	o	o	o	o	o
Quarterly table top exercises	o	o	o	o	o
Risk Assessment training	o	o	o	o	o
Run a mock disaster drill	o	o	o	o	o
Run tabletop exercises for Emergency Action Plan	o	o	o	o	o
Security Training Awareness	o	o	o	o	o
SKYWARN weather spotter training (more prudent to midwest/south regions)	o	o	o	o	o
Sport Event Evacuation Training and Exercise "National Center for Spectator Sports Safety and Security" (NCS4)	o	o	o	o	o
Sport Event Risk Management (DHS) AWR-167)	o	o	o	o	o
Sport Event Security Training through Southern Miss for Event Commander	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Sports and Special Events Incident Management, "The Texas Engineering Extension Service" (TEEX)	o	o	o	o	o
Sports Event Evacuation and Training	o	o	o	o	o
Surveillance and Observation Training	o	o	o	o	o
Threat awareness training	o	o	o	o	o
Traffic Management Training	o	o	o	o	o
Train staff for proficiency in Incident Command System forms and National Incident Management System curriculum	o	o	o	o	o
Trained in Automated External Defibrillator (AED) use	o	o	o	o	o
Trained in Basic Life Support	o	o	o	o	o
Trained in First Aid	o	o	o	o	o
Training on NCAA guidelines (also Conference regulations)	o	o	o	o	o
Training with stadium staff with similar stadium dynamics	o	o	o	o	o
Transportation Security Agency training, including bag searches, pat downs, suspicious activity identification	o	o	o	o	o
Transportation training in accordance with (Department of Transportation) including vehicle entry/exit strategy, road closure, traffic lights, etc.	o	o	o	o	o
Triage, CPR and first aid training	o	o	o	o	o
Triage, Emergency Medical Technician training & certifications	o	o	o	o	o
Understand role event staff plays in an emergency	o	o	o	o	o
Understanding of (NIMS) and how agencies work together	o	o	o	o	o
Understanding of all agencies that can assist in an emergency	o	o	o	o	o
Understanding of chain of command	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Understanding of facility design options to mitigate threats	o	o	o	o	o
Understanding of how to evacuate large crowds	o	o	o	o	o
Understanding of liability associated with operating a stadium	o	o	o	o	o
Volunteer management training & leadership	o	o	o	o	o
Yearly inspection of all facilities with local law enforcement	o	o	o	o	o
Ability to better identify security vulnerabilities	o	o	o	o	o
Ability to train all game day workers on disaster preparedness	o	o	o	o	o
Annual preseason inspections	o	o	o	o	o
Attend Security/Management training/conferences	o	o	o	o	o
Awareness of safe food storage and security practices	o	o	o	o	o
Communication program to distribute and training front line personnel	o	o	o	o	o
Community master planning experience	o	o	o	o	o
Conflict resolution training	o	o	o	o	o
Effective background check program on front line personnel	o	o	o	o	o
Effective credential and access management program	o	o	o	o	o
Effective interactions with student groups	o	o	o	o	o
Emergency Response Training programs for front line personnel	o	o	o	o	o
Game day walk through	o	o	o	o	o
Geographic Information Systems familiarity	o	o	o	o	o
Internal emergency planning	o	o	o	o	o
International Association of Venue Managers Conferences	o	o	o	o	o
Know your agencies	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Know your agencies	o	o	o	o	o
Mob-mentality training.	o	o	o	o	o
More/Better communication ability	o	o	o	o	o
Practice tabletop exercises with vital personnel	o	o	o	o	o
Prior Athlete / Athletic staff / Athletic Director Experience	o	o	o	o	o
Quick reference guides for staff members	o	o	o	o	o
Serve on stadium security advisory board	o	o	o	o	o
Shadow large scale events; bowl games, playoffs, etc…	o	o	o	o	o
Technical awareness of incident management software	o	o	o	o	o
Training in crowd dynamics	o	o	o	o	o

#4 **Please list any seminars, training conferences, web training, professional development, or any other training opportunities that are provided for you or other members of your stadium emergency management staff. This information will be used as an educational/informational list sent out to all Division I-A Football Stadium Emergency managers as a way of information sharing of what other emergency managers are doing throughout the entire NCAA Division I-A. This is in addition to the top 50 Baseline qualifications and the entire list of qualifications compiled by the expert panel that the entire NCAA will receive.**

1. _____

2. _____

3. _____

4. _____

5. _____

Appendix G: Round 3 Survey

This is the final round of a three round Delphi study. An expert panel of eight volunteers from your career peer group throughout the NCAA Division I-A created a total list of 187 qualifications throughout the first two rounds of this study, ranked them on a 5-point scale, and now I ask you to rank this list of the **Top 50** qualifications derived from the expert panel. This group of your peers was originally asked to answer the open ended question of **"What baseline qualification standards are needed for NCAA Division I-A stadium emergency managers?"** This group was asked to create this list without thinking of the financial aspect, but more on the terms of creating the most qualified stadium emergency manager.

#1 **University Name** _____

#2 **Please choose from the list of job titles that most closely resembles your job title at your university.**

- Director for Facilities & Event Management
- Associate Athletic Director for Facilities & Operations
- Assistant Athletic Director for Event Management
- Senior Associate Director of Athletics
- Associate Athletics Director for Operations
- University Police or Local Police Department
- Associate Athletic Director of Internal Operations
- Dedicated University Emergency Manager

#3 **Please rate the importance of the following recommended baseline NCAA Division I-A Stadium Emergency Manager qualifications.**

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Create emergency plans for stadium	o	o	o	o	o
(DHS) Sport Event Evacuation Training	o	o	o	o	o
Detailed event/facility operations plan and layout	o	o	o	o	o
Experience in crowd management strategy / public assembly safety	o	o	o	o	o
Know who to contact for different emergencies	o	o	o	o	o
(DHS) Sport Event Risk Management Training	o	o	o	o	o
Be able to work closely with local law enforcement agencies	o	o	o	o	o
Emergency Management Training	o	o	o	o	o
Evaluate Emergency Action Plan on regular basis	o	o	o	o	o
Have knowledge of "best practices" from other stadia	o	o	o	o	o
Know how to develop and have written Emergency Response Plan	o	o	o	o	o
Game day walk through	o	o	o	o	o
Create high functioning multi agency capable incident command system	o	o	o	o	o
Know how to properly gauge risk level of potential threats	o	o	o	o	o
Sports Event Evacuation and Training	o	o	o	o	o
Understanding of chain of command	o	o	o	o	o
Ability to identify potential threats	o	o	o	o	o
Crowd management planning in emergency situations – including egress, & additional shelter strategy	o	o	o	o	o
Evacuation plan and exercise	o	o	o	o	o
Evaluate building shortfalls	o	o	o	o	o
Experience using the Incident Management System	o	o	o	o	o
Experience with Large Event Planning	o	o	o	o	o
Form Emergency Action Plan for each facility	o	o	o	o	o
Identify vulnerabilities in current venue setup	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
League (NCAA/NFL) or Sport Specific Event/Game Regulation Training	o	o	o	o	o
National Center for Spectator Sports Safety & Security – Sport Evac Training	o	o	o	o	o
Preevent briefings; post event reviews	o	o	o	o	o
Evaluate potential technology upgrades to enhance security	o	o	o	o	o
Understanding of all agencies that can assist in an emergency	o	o	o	o	o
Understanding of facility design options to mitigate threats	o	o	o	o	o
Ability to train all game day workers on disaster preparedness	o	o	o	o	o
Annual preseason inspections	o	o	o	o	o
Certification in Crowd Safety Management	o	o	o	o	o
Crisis communications training	o	o	o	o	o
Multivenue/site emergency (including indoor & outdoor facilities) & crowd management	o	o	o	o	o
Develop and Implement front line staff security/safety training	o	o	o	o	o
Development & implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.	o	o	o	o	o
Developed and Implement Evacuation plans/training	o	o	o	o	o
Quick reference guides for staff members	o	o	o	o	o
Familiarity with appropriate laws / regulations to reduce liability and prevent negligence	o	o	o	o	o
Crowd Management training	o	o	o	o	o

(table continues)

Qualifications	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Know how to develop a risk management plan	o	o	o	o	o
Leadership Training	o	o	o	o	o
National Center for Spectator Sports Safety & Security – Venue staff training	o	o	o	o	o
Sport Event Evacuation Training and Exercise "National Center for Spectator Sports Safety and Security" (NCS4)	o	o	o	o	o
Understand role event staff plays in an emergency	o	o	o	o	o
Effective background check program on front line personnel	o	o	o	o	o
Effective credential and access management program	o	o	o	o	o
Internal emergency planning					
Know your agencies					

#4 **Please list any seminars, training conferences, web training, professional development, or any other training opportunities that are provided for you or other members of your stadium emergency management staff. This information will be used as an educational/informational list sent out to all Division I-A Football Stadium Emergency managers as a way of information sharing of what other emergency managers are doing throughout the entire NCAA Division I-A. This is in addition to the top 50 Baseline qualifications and the entire list of qualifications compiled by the expert panel that the entire NCAA will receive.**

1. _____

2. _____

3. _____

4. _____

5. _____

Appendix H: Comparison of Means for Rounds 1 and 2

Baseline Qualifications Comparison of Means for Rounds 1 and 2	**Mean Round 1**	**Mean Round 2**	**Change in Mean**
1. (CARVER) Method Training "Critically, Accessibility, Recoverability, Vulnerability, Effect, Recognizability.	3.3750	3.5000	Positive
2. (DHS) Sport Event Evacuation Training.	4.2500	4.5000	Positive
3. (DHS) Sport Event Risk Management Training.	4.3750	4.3750	Equal
4. (DHS) Sports Incident Management Training.	4.2500	3.8750	Minus
5. Ability to identify potential threats.	4.3750	4.1250	Minus
6. Able to speak, write, and give directions in multiple languages (more prudent in diverse areas of the U.S. i.e.CA).	2.7500	2.8750	Positive
7. Americans with Disabilities Act training.	3.5000	3.3750	Minus
8. Assess stadium against Department of Homeland Security (DHS) and National Infrastructure Protection Plan (NIPP) standards.	3.3750	3.7500	Positive
9. Attend conference to stay up to date on emergency planning.	3.1250	3.5000	Positive
10. Attend NSCS degree program for stadium security.	2.7500	3.2500	Positive
11. Attend Severe Weather preparedness training through National Weather Center.	3.3750	3.7500	Positive
12. Attend weather preparedness training through National Oceanic & Atmospheric Administration.	3.3750	3.6250	Positive
13. Be able to work closely with local law enforcement agencies.	4.1250	4.3750	Positive

(table continues)

Baseline Qualifications Comparison of Means for Rounds 1 and 2	Mean Round 1	Mean Round 2	Change in Mean
14. Bi Annual full scale exercises related to facility.	3.3750	3.8750	Positive
15. Biological Agent Training.	3.2500	3.1250	Minus
16. Bomb threat response training.	3.5000	3.5000	Equal
17. BS/BA Degree in Emergency Management or Related Field.	2.6250	2.8750	Positive
18. Building Science/Architectural Training.	2.8750	3.0000	Positive
19. Business continuity training.	3.1250	3.2500	Positive
20. Certification in Crowd Safety Management.	3.3750	4.0000	Positive
21. Certification in emergency management from Emergency Management Institute.	2.8750	3.3750	Positive
22. Command Staff attended FBI National Academy.	2.6250	2.8750	Positive
23. Communication and Information and Information Management (Federal Emergency Management Agency).	3.1250	3.6250	Positive
24. Courses through Emergency Management Institute.	3.1250	3.6250	Positive
25. Create emergency plans for stadium.	4.7500	4.6250	Minus
26. Create high functioning multi agency capable incident command system.	4.1250	4.2500	Positive
27. Crime prevention through environmental design training.	3.1250	3.5000	Positive
28. Crisis communications training.	3.6250	4.0000	Positive

(table continues)

Baseline Qualifications Comparison of Means for Rounds 1 and 2	Mean Round 1	Mean Round 2	Change in Mean
29. Crowd management planning in emergency situations – including egress, and additional shelter strategy.	4.2500	4.1250	Minus
30. Crowd Management Training.	4.3750	3.8750	Minus
31. Crowd management training and equipment for riotous crowds.	3.7500	3.7500	Equal
32. Crowd Manager "International Association of Venue Managers" (IAVM).	3.2500	3.1250	Minus
33. Decisionmaking Training.	3.2500	3.6250	Positive
34. Design a tiered emergency action plan.	4.2500	3.8750	Minus
35. Detailed event/facility operations plan and layout.	4.0000	4.5000	Positive
36. Develop and Implement front line staff security/safety training.	4.2500	4.0000	Minus
37. Developed and Implement Evacuation plans/training.	4.0000	3.8750	Minus
38. Developed and Implement Mitigation plans/training.	3.8750	3.8750	Equal
39. Development & implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.	4.5000	4.0000	Minus
40. Development of response to less common emergencies: radiological, biological, chemical, nuclear, explosives.	3.7500	3.6250	Minus
41. Dignitary Protection Training and plan for high profile guests.	3.3750	3.5000	Positive

(table continues)

Baseline Qualifications Comparison of Means for Rounds 1 and 2	Mean Round 1	Mean Round 2	Change in Mean
42. Dispatch training, command post operations with both athletics & Police Department.	3.8750	3.5000	Minus
43. E-141 Instructional Presentation and Evaluation Skills (FEMA) course.	3.0000	3.3750	Positive
44. E-146 Homeland Security Exercise and Evaluation Program certification (HSEEP) FEMA course.	3.6250	3.6250	Equal
45. E-155 Building Design for Homeland Security (FEMA) course.	3.2500	3.3750	Positive
46. E-276 Benefit Cost Analysis (FEMA) course.	2.7500	3.2500	Positive
47. E-390 Emergency Management Planning, Preparedness, Training and Education for Colleges and Universities (FEMA) course.	3.6250	3.3750	Minus
48. Electrical safety & maintenance training in compliance (OSHA) regulations.	2.5000	3.0000	Positive
49. Emergency Management Training.	3.7500	4.5000	Positive
50. Emergency Manual development course.	3.6250	3.2500	Minus
51. Emergency Medical Training.	3.3750	3.1250	Minus
52. Emergency Medical Training (awareness of system).	3.6250	3.2500	Minus
53. Emergency Operations Center Management and Operations (Federal Emergency Management Agency).	3.7500	3.8750	Positive
54. Emergency training as it applies to ADA situations.	3.7500	3.6250	Minus

(table continues)

Baseline Qualifications Comparison of Means for Rounds 1 and 2	Mean Round 1	Mean Round 2	Change in Mean
55. Enhance emergency response and recovery operations.	3.5000	3.8750	Positive
56. Evacuation plan and exercise.	3.7500	4.2500	Positive
57. Evaluate building shortfalls.	3.6250	4.1250	Positive
58. Evaluate communication assets and liabilities.	3.7500	3.6250	Minus
59. Evaluate Emergency Action Plan on regular basis.	4.2500	4.3750	Positive
60. Evaluate potential technology upgrades to enhance security.	3.7500	3.8750	Positive
61. Event Commander attends FEMA Emergency Management Institute.	3.8750	3.8750	Equal
62. Experience in crowd management strategy / public assembly safety.	4.3750	4.5000	Positive
63. Experience using the Incident Management System.	4.0000	4.1250	Positive
64. Experience with Large Event Planning.	4.3750	4.1250	Minus
65. Facial recognition camera system and venue camera monitoring.	2.7500	2.8750	Positive
66. Familiarity with appropriate laws / regulations to reduce liability and prevent negligence.	3.1250	3.8750	Positive
67. Federal Emergency Management Agency Emergency Planning.	3.1250	3.6250	Positive
68. FEMA emergency management training.	3.5000	3.8750	Positive
69. Fire Safety Code Training.	3.2500	3.1250	Minus
70. Fire Safety Training (Awareness).	3.1250	3.5000	Positive

(table continues)

Baseline Qualifications Comparison of Means for Rounds 1 and 2	Mean Round 1	Mean Round 2	Change in Mean
71. First aid, CPR certification.	3.1250	2.7500	Minus
72. Form Emergency Action Plan for each facility.	4.0000	4.1250	Positive
73. G-358 Evacuation and Reentry Planning.	3.5000	3.3750	Minus
74. G-367 Emergency Planning for Campus Executives (DHS) course.	3.5000	3.3750	Minus
75. Have all staff enrolled in self-pass wellness/physical fitness training.	2.8750	3.0000	Positive
76. Have command staff attend the Academy for Venue Safety and Security; Core Training.	3.2500	3.3750	Positive
77. Have Event Commander Graduate as a Venue Safety and Security Manager.	3.2500	3.5000	Positive
78. Have knowledge “best practices” from other stadia.	4.2500	4.3750	Positive
79. Hazardous Materials Awareness.	3.3750	3.6250	Positive
80. HAZMAT certification.	3.0000	2.2500	Minus
81. Health Code Training.	2.7500	2.7500	Equal
82. ICS-200 ICS for Single Resources and Initial Action Incidents (NIMS) course.	3.2500	3.6250	Positive
83. ICS-100A Introduction to Incident Command System (NIMS) course.	3.5000	3.5000	Equal
84. ICS-300 Intermediate Incident Command System (NIMS) course.	3.5000	3.6250	Positive
85. ICS-400 Advanced Incident Command System (NIMS) course.	3.5000	3.2500	Minus

(table continues)

Baseline Qualifications Comparison of Means for Rounds 1 and 2	Mean Round 1	Mean Round 2	Change in Mean
86. ICS-700 National Incident Management System – An Introduction (NIMS) course.	3.5000	3.5000	Equal
87. ICS-800 National Response Plan – An Introduction (NIMS) course.	3.3750	3.3750	Equal
88. Identify and evaluate physical protection systems.	3.3750	3.3750	Equal
89. Identify terrorist threats and motivations.	3.2500	3.7500	Positive
90. Identify vulnerabilities in current venue setup.	3.8750	4.1250	Positive
91. Improvised Explosive Device recognition training.	3.2500	3.7500	Positive
92. International Building Code familiarization.	2.7500	3.2500	Positive
93. IS-271 Anticipating Hazardous Weather and Community Risk.	3.1250	3.3750	Positive
94. Job shadow at larger venue.	3.2500	3.6250	Positive
95. Know how to conduct emergency response plan drills.	3.3750	3.7500	Positive
96. Know how to develop a risk management plan.	4.1250	4.0000	Minus
97. Know how to develop a written Emergency Response Plan.	4.1250	4.3750	Positive
98. Know how to properly gauge risk level of potential threats.	4.1250	4.2500	Positive
99. Know how to train event staff on emergency management.	3.7500	3.7500	Equal
100. Knowledge of (Department of Homeland Security) grants available.	2.6250	4.5000	Positive
101. Know who to contact for different emergencies.	4.0000	3.2500	Minus

(table continues)

Baseline Qualifications Comparison of Means for Rounds 1 and 2	Mean Round 1	Mean Round 2	Change in Mean
102. Law Enforcement Training.	3.0000	2.8750	Minus
103. Leadership Training.	3.3750	4.0000	Positive
104. Leadership training: as it applies to emergency & disaster situations.	3.7500	3.6250	Minus
105. League (NCAA/NFL) or Sport Specific Event/Game Regulation Training.	3.6250	4.1250	Positive
106. Live-action, onsite emergency trainings covering responses to Level 1 (i.e., Contained Fire) & Level 2 (i.e. earthquake) types of emergencies – Coordinated through FEMA & Department of Homeland Security.	3.6250	3.8750	Positive
107. Master Continuity Practitioner.	3.7500	2.7500	Minus
108. Master's Degree in Emergency Management or Related Field.	2.7500	2.8750	Positive
109. Multivenue/site emergency (including indoor & outdoor facilities) & crowd management training.	4.0000	3.8750	Minus
110. National Center for Spectator Sports Safety & Security – SESA system training.	3.8750	3.7500	Minus
111. National Center for Spectator Sports Safety & Security – Sport Evac Training.	3.7500	4.1250	Positive
112. National Center for Spectator Sports Safety & Security – Venue staff training.	3.7500	4.0000	Positive
113. National Center for Spectator Sports Safety & Security – Professional Development Program.	3.7500	3.7500	Equal
114. National Center for Spectator Sports Safety & Security – Certificate Program.	3.7500	3.7500	Equal

(table continues)

Baseline Qualifications Comparison of Means for Rounds 1 and 2	Mean Round 1	Mean Round 2	Change in Mean
115. National Incident Management System (NIMS) Training.	4.0000	3.7500	Minus
116. National Institute for Certification in Engineering Technologies (NICET) training (fire systems, code, alarms).	2.7500	3.2500	Positive
117. National Institute of Environmental Health Sciences (NIEHS) – Earthquake response training.	3.3750	3.0000	Minus
118. National Weather Service (NWS) Storm Spotter Training.	3.5000	3.6250	Positive
119. NCAA rules training.	3.5000	3.6250	Positive
120. NFPA-1600: Standard on Disaster/Emergency Management and Business Continuity Programs.	3.6250	3.3750	Minus
121. Occupational Safety and Health Organization Training.	3.2500	3.1250	Minus
122. Occupational Safety and Health Organization Training compliance training.	3.3750	3.5000	Positive
123. Officer Down Training.	2.6250	3.0000	Positive
124. Physical Security Professional (PSP).	3.0000	3.5000	Positive
125. Pre event briefings; post event reviews.	4.1250	4.1250	Equal
126. Professional Continuity Practitioner.	3.2500	3.7500	Positive
127. Proper radio communication skills.	3.8750	3.7500	Minus
128. Public Relations Training.	3.7500	3.7500	Equal
129. Quarterly table top exercises.	2.8750	3.2500	Positive
130. Risk Assessment training.	4.0000	3.7500	Minus

(table continues)

Baseline Qualifications Comparison of Means for Rounds 1 and 2	Mean Round 1	Mean Round 2	Change in Mean
131. Run a mock disaster drill.	3.6250	3.7500	Positive
132. Run tabletop exercises for Emergency Action Plan.	3.5000	3.7500	Positive
133. Security Training Awareness.	3.6250	3.8750	Positive
134. SKYWARN weather spotter training (more prudent to Midwest/South regions).	3.5000	3.5000	Equal
135. Sport Event Evacuation Training and Exercise "National Center for Spectator Sports Safety and Security" (NCS4).	3.8750	4.0000	Positive
136. Sport Event Risk Management (DHS) AWR-167).	3.8750	3.8750	Equal
137. Sport Event Security Training through Southern Miss for Event Commander.	3.6250	3.7500	Positive
138. Sports and Special Events Incident Management, "The Texas Engineering Extension Service" (TEEX).	3.2500	3.8750	Positive
139. Sports Event Evacuation and Training.	3.8750	4.2500	Positive
140. Surveillance and Observation Training.	3.3750	3.5000	Positive
141. Threat awareness training.	3.8750	3.8750	Equal
142. Traffic Management Training.	3.6250	3.3750	Minus
143. Train staff for proficiency in Incident Command System forms and National Incident Management System curriculum.	3.6250	3.5000	Minus
144. Trained in Automated External Defibrillator (AED) use.	3.1250	3.1250	Equal
145. Trained in Basic Life Support.	3.1250	3.2500	Positive

(table continues)

Baseline Qualifications Comparison of Means for Rounds 1 and 2	Mean Round 1	Mean Round 2	Change in Mean
146. Trained in First Aid.	3.1250	3.5000	Positive
147. Training on NCAA guidelines (also Conference regulations).	3.2500	3.6250	Positive
148. Training with stadium staff with similar stadium dynamics.	3.2500	3.7500	Positive
149. Transportation Security Agency training, including bag searches, pat downs suspicious activity identification.	3.2500	3.6250	Positive
150. Transportation training in accordance with (Department of Transportation) including vehicle entry/exit strategy, road closure, traffic lights, etc.	3.2500	3.6250	Positive
151. Triage, CPR and first aid training.	3.1250	3.2500	Positive
152. Triage, Emergency Medical Technician training & certifications.	3.0000	3.1250	Positive
153. Understand role event staff plays in an emergency.	4.0000	4.0000	Equal
154. Understanding of (NIMS) and how agencies work together work together.	3.8750	3.5000	Minus
155. Understanding of all agencies that can assist in an emergency.	4.1250	4.2500	Positive
156. Understanding of chain of command.	4.0000	4.3750	Positive
157. Understanding of facility design options to mitigate threats.	4.1250	4.1250	Equal
158. Understanding of how to evacuate large crowds.	3.8750	3.8750	Equal
159. Understanding of liability associated with operating a stadium.	3.5000	3.7500	Positive
160. Volunteer management training & leadership.	3.0000	3.2500	Positive
161. Yearly inspection of all facilities with local law enforcement.	3.5000	3.7500	Positive

Appendix I: Total list of 187 Qualifications with Researcher Changes Made

1. (CARVER) Method Training "Critically, Accessibility, Recoverability, Vulnerability, Effect, Recognizability" "Changed from CARVER Method Training"
2. (DHS) sport event evacuation training
3. (DHS) sport event risk management training
4. (DHS) sports incident management training
5. Ability to identify potential threats
6. Able to speak, write, & give directions in multiple languages (more prudent in diverse areas of the U.S. i.e. CA)
7. Americans with Disabilities Act training
8. Assess stadium against Department of Homeland Security (DHS) and National Infrastructure Protection Plan (NIPP) standards "Changed from Assess stadium against DHS and NIPP standards"
9. Attend Conference to stay up to date on emergency planning
10. Attend NSCS degree program for stadium security
11. Attend severe weather preparedness training through National Weather Center
12. Attend weather preparedness training through National Oceanic & Atmospheric Administration. "Changed from NOOA to National Oceanic & Atmospheric Administration"
13. Be able to work closely with local law enforcement agencies
14. Biannual full scale exercises related to facility
15. Biological agent training
16. Bomb threat response training
17. BS/BA degree in emergency management or related field
18. Building science/architectural training
19. Business continuity training
20. Certification in crowd safety management

21. Certification in emergency management from Emergency Management Institute "Changed from Certification in Emergency Management (EMI)"
22. Command Staff attended FBI National Academy
23. Communication and Information and information management (Federal Emergency Management Agency) "Changed from Communication and Information Management (FEMA)"
24. Courses through Emergency Management Institute
25. Create emergency plans for stadium
26. Create high functioning multi agency capable incident command system
27. Crime prevention through environmental design training
28. Crisis communications training
29. Crowd management planning in emergency situations – including egress, & additional shelter strategy
30. Crowd management training
31. Crowd management training and equipment for riotous crowds
32. Crowd manager "International Association of Venue Managers" (IAVM) "Changed from crowd manager (IAVM)"
33. Decisionmaking training
34. Design a tiered emergency action plan
35. Detailed event/facility operations plan and layout
36. Develop and implement front line staff security/safety training
37. Developed and implement evacuation plans/training
38. Developed and implement mitigation plans/training
39. Development & implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.
40. Development of response to less common emergencies: radiological, biological, chemical, nuclear, explosives

41. Dignitary protection training and plan for high profile guests
42. Dispatch training, command post operations with both athletics & Police Department "Changed PD to Police Department"
43. E-141 Instructional Presentation and Evaluation Skills (FEMA) course "Changed from E141 Instructional Presentation and Evaluation Skills"
44. E-146 Homeland Security Exercise and Evaluation Program certification (HSEEP) FEMA course "Changed from E 146 HSEEP certification
45. E-155 Building Design for Homeland Security (FEMA) course "Changed from E-155 Building Design for Homeland Security"
46. E-276 Benefit Cost Analysis (FEMA) course "Changed from E-276 Benefit Cost Analysis"
47. E-390 Emergency Management Planning, Preparedness, Training and Education for Colleges and Universities (FEMA) course "Changed from E-390 Emergency Management Planning, Preparedness, Training and Education for Colleges and Universities"
48. Electrical safety & maintenance training in compliance (OSHA) regulations
49. Emergency management training
50. Emergency manual development course
51. Emergency medical training
52. Emergency medical training (awareness of system)
53. Emergency Operations Center Management and Operations (Federal Emergency Management Agency) "Changed from (EOC) Management and Operations (FEMA)"
54. Emergency training as it applies to ADA situations
55. Enhance emergency response and recovery operations
56. Evacuation plan and exercise "Changed Evac to Evacuation"
57. Evaluate building shortfalls
58. Evaluate communication assets and liabilities
59. Evaluate emergency action plan on regular basis "Changed from Evaluate update EAP on regular basis"

60. Evaluate potential technology upgrades to enhance security
61. Event commander attend FEMA Emergency Management Institute
62. Experience in crowd management strategy / public assembly safety
63. Experience using the incident management system "Changed from Experience using the IMS System"
64. Experience with large event planning
65. Facial recognition camera system and venue camera monitoring
66. Familiarity with appropriate laws / regulations to reduce liability and prevent negligence
67. Federal Emergency Management Agency Emergency Planning "Changed from FEMA Emergency Planning"
68. FEMA emergency management training
69. Fire safety code training
70. Fire safety training (awareness)
71. First aid, CPR certification
72. Form emergency action plan for each facility "Changed from Form EAP for each facility"
73. G-358 Evacuation and Reentry Planning
74. G-367 Emergency Planning for Campus Executives (DHS) course
75. Have all staff enrolled in self-pass wellness/physical fitness training
76. Have command staff attend the Academy for Venue Safety and Security; core training
77. Have event commander graduate as a venue safety and security manager
78. Have knowledge of "best practices" from other stadia
79. Hazardous materials awareness
80. HAZMAT certification
81. Health Code Training
82. ICS-200 ICS for Single Resources and Initial Action Incidents (NIMS) course "Changed from ICS-200"
83. ICS-100A Introduction to Incident Command System (NIMS) course "Changed from ICS-100A"

84. ICS-300 Intermediate Incident Command System (NIMS) course "Changed from ICS-300"
85. ICS-400 Advanced Incident Command System (NIMS) course "Changed from ICS-400"
86. ICS-700 National Incident Management System – An Introduction (NIMS) course "Changed from ICS-700"
87. ICS-800 National Response Plan – an introduction (NIMS) course "Changed from ICS-800"
88. Identify hazardous weather and community risk and evaluate physical protection systems
89. Identify terrorist threats and motivations
90. Identify vulnerabilities in current venue setup
91. Improvised explosive device recognition training "Changed IED to Improvised Explosive Device"
92. International Building Code familiarization
93. IS-271 Anticipating hazardous weather and community risk
94. Job shadow at larger venue
95. Know how to conduct emergency response plan drills
96. Know how to develop a risk management plan
97. Know how to develop a written emergency response plan
98. Know how to properly gauge risk level of potential threats
99. Know how to train event staff on emergency management
100. Know who to contact for different emergencies
101. Knowledge of (Department of Homeland Security) grants available "DHS changed to Department of Homeland Security"
102. Law enforcement training
103. Leadership training
104. Leadership training: as it applies to emergency & disaster situations
105. League (NCAA/NFL) or sport specific event/game regulation training
106. Live-action, onsite emergency trainings covering responses to Level 1 (i.e. contained fire) & Level 2 (i.e. earthquake) types of emergencies – coordinated through FEMA & Department of Homeland Security

107. Master continuity practitioner
108. Master's degree in emergency management or related field
109. Multivenue/site emergency (including indoor & outdoor facilities) & crowd management training
110. National Center for Spectator Sports Safety & Security – SESA system training "NCS4 changed to National Center for Spectator Sports Safety & Security"
111. National Center for Spectator Sports Safety & Security – Sport evac training "NCS4 changed to National Center for Spectator Sports Safety & Security"
112. National Center for Spectator Sports Safety & Security – venue staff training "NCS4 changed to National Center for Spectator Sports Safety & Security"
113. National Center for Spectator Sports Safety & Security – Professional Development Program "NCS4 changed to National Center for Spectator Sports Safety & Security"
114. National Center for Spectator Sports Safety & Security-Certificate Program "NCS4 changed to National Center for Spectator Sports Safety & Security"
115. National incident management system (NIMS) training "Changed from NIMS Training"
116. National Institute for Certification in Engineering Technologies (NICET) training (fire systems, code, alarms) "Changed from NICET training (fire systems, code, alarms)"
117. National Institute of Environmental Health Sciences (NIEHS) – Earthquake response training "Changed from NIEHS – Earthquake response training"
118. National Weather Service (NWS) storm spotter training "Changed from NWS Storm Spotter Training"
119. NCAA rules training
120. NFPA-1600: Standard on Disaster/Emergency Management and Business Continuity programs "Changed from NFPA-1600 familiarization"
121. Occupational Safety and Health Organization Training "Changed from (OSHA)Training"
122. Occupational Safety and Health Organization training compliance training "Changed from (OSHA) compliance training
123. Officer down training

124. Physical security professional (psp)
125. Pre event briefings; post event reviews
126. Professional continuity practitioner
127. Proper radio communication skills
128. Public relations training
129. Quarterly table top exercises
130. Risk assessment training
131. Run a mock disaster drill
132. Run tabletop exercises for Emergency Action Plan "Changed from Run tabletop exercise for EAP"
133. Security training awareness
134. SKYWARN weather spotter training (more prudent to Midwest/South regions)
135. Sport event evacuation training and exercise "National Center for Spectator Sports Safety and Security" (NCS4) "Changed from Sport Event Evacuation Training and Exercise (NCS4)"
136. Sport event risk management (DHS) AWR-167)
137. Sport event security training through Southern Miss for event commander
138. Sports and special events incident management, "The Texas Engineering Extension Service" (TEEX) "Changed from Sports and Special Events Incident Management (TEEX)"
139. Sports Event Evacuation and Training
140. Surveillance and Observation Training
141. Threat awareness training
142. Traffic Management Training
143. Train staff for proficiency in Incident Command System forms and National Incident Management System curriculum "Changed ICS to Incident Command System and NIMS to National Incident Management System"
144. Trained in automated external defibrillator (AED) use "Changed from Trained in AED use"
145. Trained in Basic Life Support

146. Trained in First Aid
147. Training on NCAA guidelines (also Conference regulations)
148. Training with stadium staff with similar stadium dynamics
149. Transportation Security Agency training, including bag searches, pat downs, suspicious activity identification "Changed TSA to Transportation Security Agency"
150. Transportation training in accordance with (Department of Transportation) including vehicle entry/exit strategy, road closure, traffic lights, etc. "DOT changed to Department of Transportation"
151. Triage, CPR and first aid training
152. Triage, emergency medical technician training & certifications. "EMT changed to Emergency Medical Technician"
153. Understand role event staff plays in an emergency
154. Understanding of (NIMS) and how agencies work together
155. Understanding of all agencies that can assist in an emergency
156. Understanding of chain of command
157. Understanding of facility design options to mitigate threats
158. Understanding of how to evacuate large crowds
159. Understanding of liability associated with operating a stadium
160. Volunteer management training & leadership
161. Yearly inspection of all facilities with local law enforcement

With Additional Responses from Round 1

162. Ability to better identify security vulnerabilities
163. Ability to train all game day workers on disaster preparedness
164. Annual preseason inspections
165. Attend security/management training/conferences
166. Awareness of safe food storage and security practices
167. Communication program to distribute and training front line personnel

168. Community master planning experience
169. Conflict resolution training
170. Effective background check program on front line personnel
171. Effective credential and access management program
172. Effective interactions with student groups
173. Emergency Response Training programs for front line personnel
174. Game day walk through
175. Geographic Information Systems familiarity
176. Internal emergency planning
177. International Association of Venue Managers Conferences "Changed from IAVM Conferences"
178. Know your agencies
179. Mob-mentality training.
180. More/Better communication ability
181. Practice tabletop exercises with vital personnel
182. Prior athlete / athletic staff / athletic director experience
183. Quick reference guides for staff members
184. Serve on stadium security advisory board
185. Shadow large scale events; bowl games, playoffs, etc…
186. Technical awareness of incident management software
187. Training in crowd dynamics

Appendix J: Difference in Means for Rounds 2 and 3

	Baseline Qualifications	Mean Round 2	Mean Round 3	Change
1.	Internal emergency planning	4.0000	4.2600	Positive
2.	Experience with Large Event Planning	4.1250	4.1600	Positive
3.	Detailed event/facility operations plan and layout	4.5000	4.3400	Negative
4.	Evaluate potential technology upgrades to enhance security	3.8750	3.8400	Negative
5.	Sports Event Evacuation and Training	4.2500	3.9600	Negative
6.	Create emergency plans for stadium	4.6250	4.6222	Negative
7.	Crisis communications training	4.0000	3.8200	Negative
8.	Quick reference guides for staff members	3.8750	4.0400	Positive
9.	Development & implementation of an emergency plan from an expert panel including: athletic facility technicians, event managers, campus safety engineers, campus PD, appropriate state/federal agencies, etc.	4.0000	4.2000	Positive
10.	League (NCAA/NFL) or sport specific event/game regulation training	4.1250	3.6600	Negative
11.	Emergency management training	4.5000	4.2000	Negative
12.	Be able to work closely with local law enforcement agencies	4.3750	4.6200	Positive
13.	Preevent briefings; post event reviews	4.1250	4.2800	Positive
14.	Multivenue/site emergency (including indoor & outdoor facilities) & crowd management	3.8750	3.9200	Positive
15.	Crowd management planning in emergency situations – including egress, & additional shelter strategy	4.1250	4.2600	Positive

(table continues)

Baseline Qualifications	Mean Round 2	Mean Round 3	Change
16. National Center for Spectator Sports Safety & Security – Venue staff training	4.0000	3.4600	Negative
17. Experience in crowd management strategy/ public assembly safety	4.5000	4.2200	Negative
18. Ability to identify potential threats	4.1250	4.1600	Positive
19. Create high functioning multi agency capable incident command system	4.2500	4.1600	Negative
20. Know who to contact for different emergencies	4.5000	4.6000	Positive
21. Ability to train all game day workers on disaster preparedness	4.1250	3.9800	Negative
22. Understanding of facility design options to mitigate threats	4.1250	4.0000	Negative
23. Have knowledge of "best practices" from other stadia	4.3750	4.0400	Negative
24. Understanding of all agencies that can assist in an emergency	4.2500	4.3400	Positive
25. Sport event evacuation training and exercise "National Center for Spectator Sports Safety and Security" (NCS4)	4.0000	3.6000	Negative
26. Game day walk through	4.3750	4.0400	Negative
27. Leadership training	4.0000	3.9000	Negative
28. National Center for Spectator Sports Safety & Security – Sport Evac Training	4.1250	3.4800	Negative
29. Form emergency action plan for each facility	4.1250	4.3800	Positive
30. Effective credential and access management program	4.0000	4.2400	Positive
31. Identify vulnerabilities in current venue setup	4.1250	4.2600	Positive
32. Certification in crowd safety management	4.0000	3.4400	Negative

(table continues)

Baseline Qualifications	Mean Round 2	Mean Round 3	Change
33. Evacuation plan and exercise	4.2500	4.2000	Negative
34. Familiarity with appropriate laws / regulations to reduce liability and prevent negligence	3.8750	4.0800	Positive
35. Annual preseason inspections	4.1250	4.1000	Negative
36. Know how to properly gauge risk level of potential threats	4.2500	4.0600	Negative
37. Evaluate Emergency Action Plan on regular basis	4.3750	4.2400	Negative
38. Experience using the Incident Management System	4.1250	3.8800	Negative
39. know your agencies	4.0000	4.2600	Positive
40. (DHS) sport event evacuation training	4.5000	3.8800	Negative
41. Understanding of chain of command	4.3750	4.3200	Negative
42. Effective background check program on front line personnel	4.0000	3.9400	Negative
43. Know how to develop and have written an emergency response plan	4.3750	4.1400	Negative
44. Understand role event staff plays in an emergency	4.0000	4.3400	Positive
45. Evaluate building shortfalls	4.1250	4.1200	Negative
46. Crowd management training	3.8750	4.0000	Positive
47. (DHS) sport event risk management training	4.3750	3.7200	Negative
48. Know how to develop a risk management plan	4.0000	4.0400	Positive
49. Develop and Implement front line staff security/safety training	4.0000	4.1200	Positive
50. Developed and implement evacuation plans/training	3.8750	4.1600	Positive

Appendix K: Additional Recommended Training Opportunities

- Numerous DHS seminars
- IVAM conferences
- State has sports security venue meeting every quarter (includes Pro, College and Local venues)
- Athletic staff training with emergencies, (for player's/coaches)
- Homeland Security Conference
- Yearly visit from Department of Homeland Security and FBI
- Monthly meetings with local law enforcement
- Weekly planning meetings for game operations
- Constant review of evacuation procedures
- IAVM crowd manager
- TEEX Stadium Even/Incident Management
- Seminar for event safety—NCS4
- Incident command trainings 100, 200, 300, 400
- NWS severe weather awareness training
- Terrorist Event TABLE TOP financed by DHS Grant
- Secret Service/DHS Terrorist Seminar
- Oklahoma Bombing reflection/takeaways
- NCDCCPS DESM sponsored training
- MGT 335: event security planning for public safety professionals
- OGT 206: sports and special events incident management

- Annual SEC Chiefs and Emergency Managers Conference
- STADIUM MANAGERS
- DHS – FEMA Enhanced Threat and Risk Assessment
- Sport event risk management
- DHS training for stadium manager
- IAVM seminars @convention/trade show
- NERRTC training at "Texas A&M" for community leader
- CPR web training
- OSHA Compliance & Workplace Safety
- First responder awareness training
- Terrorism awareness training – protecting soft targets
- Incident management training
- DHS Site Assist Visit
- Sport event training at Ralph Wilson Stadium
- Screening of persons by observational techniques (SPOT)
- Member of International Association of Emergency Managers
- Certified ICS Trainer
- Attend International Association of Chiefs of Police

Curriculum Vitae

Joshua R. Hoogstra

Education	PhD, Public Administration and Policy Making, Walden University, 2012
	MA, Public Administration and Policy Making, Walden University, 2008
	BA, Criminal Justice, Colorado Technical University, CO, 2006
Experience	First Sergeant, 2012–Present, United States Air Force
	C-17A Instructor Loadmaster, 2000–2012, United States Air Force
	Fuels Specialist, 1995–2000, United States Air Force
Awards and Honors	Senior Non-Commissioned Officer of the Quarter 2011
	Non-Commissioned Officer of the Quarter 2008
	Six Air Medals
	Two Aerial Achievement Medals
	Meritorious Service Medal
	Three Commendation Medals
	Three Achievement Medals