Identifying Preparatory and Tactical Techniques for Emergency Responses to Jail Evacuations

David Murphy

Perkins Township Fire Department

Sandusky, Ohio

Certification Statement

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writing of another.

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Abstract

The problem was Perkins Township Fire Department personnel had not identified methods to prepare for and respond to emergency jail evacuations. The purpose of the research was to identify preparatory and tactical techniques to be utilized for jail evacuations.

The descriptive research method was utilized to answer four research questions. The questions were: a) How do jail personnel prepare for evacuations? b) How do fire department personnel prepare for jail evacuations? c) What tactics do jail personnel utilize during evacuations? d) What tactics do fire department personnel utilize during jail evacuations? In conjunction with the literature review, original research was conducted to answer the research questions. The research consisted of two surveys.

The results indicate consistent, collaborative training and preplanning by jail and fire department personnel is necessary to help improve the outcome during emergency evacuations. The research points toward the idea jail staff should utilize specialized equipment, such as self-contained breathing apparatus, to help protect jail occupants. Further, fire department personnel should assist with training on such equipment. The research demonstrates full evacuations are not always the preferred tactic during emergency events. Partial evacuations and protecting detainees in place must also be considered.

The recommendations include several points for consideration. Developing a joint fire department and jail staff plan review committee, fire department personnel assisting jail staff with SCBA training, and semi-annual training on jail familiarization for fire department personnel are all recommended. A final recommendation is for other county jail and fire department staffs to develop a joint committee to review evacuation plans and operational guidelines.

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Identifying Risks Associated with Emergency Evacuations at Correctional Facilities

Jail fires and disasters, while somewhat rare, can be one the highest life safety risks a fire department may face. Correctional facilities are not designed for easy egress by occupants. Correctional facilities are designed to prohibit occupants from leaving. For this reason, evacuations of these facilities can be time consuming and labor intensive.

The State of Ohio is currently divided into eighty-eight counties. Within these counties it falls under the County Sheriffs' responsibilities to oversee the county jails. (ORC Chapter 341: Jails). Multiple county leaders, for various reasons, have decided to share jail facilities thus there are actually only seventy-nine jails currently. The Erie County Jail, is located within Perkins Township and fire protection for this facility is provided by the Perkins Township Fire Department.

During a fire which occurred last year, I operated as the incident commander. During that fire event myself and fire personnel were called upon to extinguish a laundry room fire. Jail occupants were not required to evacuate the structure due to the remote location of the laundry area in relation to the detainee housing area. During the incident debriefing that followed, multiple concerns were identified. The first concern was fire department personnel were not aware of the jail procedures to evacuate detainees. The second concern was fire department personnel have had a limited amount of training with respect to the Erie County Jail.

The problem was Perkins Township Fire Department staff had not identified methods to prepare for and respond to evacuations at the Erie County Jail. Not identifying the methods to prepare for and respond to jail evacuations could lead to inefficient operations, injuries, and possible fatalities of correctional facility occupants, staff and emergency responders. The purpose of this research project was to identify methods to prepare for and respond to jail

evacuations. Identifying these methods could reduce risks to detainees, jail staff, and emergency responders that might occur during an emergency evacuation within a jail. Through research I attempted to identify how other jail and fire department personnel prepare for and respond to emergency evacuations. Although the research is directed towards responses to Ohio county jails, the information obtained could be useful to fire department and correctional facility staffs across the nation.

The research method utilized was the descriptive method. Through the research I attempted to answer the following questions: a) How do jail personnel prepare for emergency evacuations at county jails? b) How do fire department personnel prepare for emergency evacuations at county jails? c) What tactics do jail staff currently use during emergency evacuation events? d) What tactics do fire department personnel currently use during emergency evacuation events? The questions were answered through the creation and dissemination of two surveys. One survey was distributed to the county sheriffs who oversee the seventy-nine county jails in the State of Ohio. The second survey was distributed to the fire departments that provide fire protection to those county jails.

Background and Significance

The Perkins Township Fire Department (PTFD) is a combination department located in Sandusky, Ohio. The PTFD provides fire protection, emergency medical services, and rescue services to the twelve-thousand residents of Perkins Township, operating with a daily shift staffing of eight personnel. As part of these duties the PTFD provides emergency services to the Erie County Jail (ECJ). The ECJ, which falls under the direction of the Erie County Sheriff, can house up to one-hundred and six detainees. These detainees may be serving sentences for misdemeanor crimes committed or awaiting trial for crimes they have been accused of. Based on

the limited manpower of the PTFD, the significant number of ECJ occupants, and the obvious limited access to egress in a correctional facility, the ECJ poses a noteworthy threat to injury or loss of life due to fire or emergency event.

In the last decade the PTFD has responded to multiple smoke and fire emergencies at the Erie County Jail, along with multiple fire alarms and other calls for service. In 1992 a tornado struck Perkins Township causing severe damage within two miles of the ECJ. In 2006 flooding and rising water occurred in three separate residential developments located within a half mile of the ECJ. Although these natural disasters did not directly affect the ECJ, the proximity of the disasters to the facility underscore the importance for identifying evacuation procedures should one of these disasters directly impact the facility.

In 2011 the PTFD responded to a laundry room fire at the ECJ. As the incident commander for that event, one of the first priorities I considered was the possible need for evacuation of the facility. Fortunately, evacuation was not needed due to the remote location of the laundry room relative to the occupant detention area. However, the evacuation concern was brought to the forefront and reinforced during the post-incident debriefing. Several risks with regards to the ECJ became evident. First, the PTFD had no evacuation plan for the ECJ and was not aware if the ECJ staff had an evacuation plan either. Second, PTFD personnel had not received the training necessary to prepare for an evacuation. Finally, there was no identification of effective tactics to protect detainees during an evacuation.

Correctional facility emergency evacuation concerns are not isolated to Perkins Township. Over the last century there have been significant losses of life due to fire or disasters which have occurred in correctional facilities. The National Fire Protection Association (NFPA) released a bulletin on the deadliest prison fires. One such fire at the Ohio State Penitentiary

resulted in the loss of three-hundred and twenty lives. A fire in the Maury County Jail in Columbia, Tennessee caused the death of forty-two inmates (www.nfpa.org). These events demonstrate correctional disasters pose a high life-safety risk and evacuations of correctional facilities are a national concern. Methods to prevent risks associated with evacuations need to be identified.

Evacuation events at the ECJ do not occur frequently, as a matter of fact, evacuations are very rare. By their very nature, correctional facilities are designed to prevent occupants from leaving. One of the major goals of jail staff is to detain occupants, and prevent them from exiting the facility and potentially reentering civilian population. However, the risk for loss of life and injury in a correctional facility emergency event can be very high as pointed out by the NFPA prison fire bulletin. The detainees are at risk, as well as the facility staff and emergency responders who must carry out the evacuation. The dangers of low frequency, high risk events have been well documented by educator Gordon Graham. Graham points out low frequency, high risk events are exactly the types of events emergency responders must train for to prevent injuries or deaths (Graham 2005).

My intent with this applied research project was to identify methods to prepare for and respond to emergency evacuations at correctional facilities, more specifically county jail evacuations. Risk reduction would be achieved by identifying how jail and fire department personnel currently prepare for and respond to evacuation emergencies. Identifying risk reduction methods could decrease the potential for injury or loss of life. The aim of the project relates directly to the goals of the United States Fire Administration (USFA) to decrease local risk, improve disaster readiness, and improve the all-hazards readiness of the fire service (http://www.usfa.fema.gov/about/strategic/). Identifying these risks also directly ties to the

Executive Development course topic discussed in Unit 11: Service Quality of the course manual (Executive Development Course Guide 2012).

Literature Review

The literature review was conducted with the goal of identifying what other researchers have found regarding preparation for and response to emergency evacuations of jails. The literature review is framed around the four research questions. The results include more general research that is not necessarily specific to jails but may provide insight into emergency planning and tactics. The first aspect identifies what other researchers have reported about how various entities prepare for emergency evacuations. This component includes the topics of planning and training. The second component identifies what fellow researchers have discovered about how firefighters prepare for emergency events. The third element of the literature review describes what others have identified with respect to the tactics utilized by jail staff when responding to emergency evacuations. The fourth and final component of the literature review details the tactics fire departments utilize when responding to emergency evacuation events. Based on the fact the tactics of jail staff and fire department personnel are directly related during an evacuation response, research questions three and four may be addressed simultaneously within some parts of the literature review. The literature review includes information obtained from the research of others, standards or guidelines, peer reviewed journals, and other references.

It is important to note there does not seem to be extensive research on the emergency evacuations of jails, nor fire department response to evacuations. Gaillard and Navizet (2012) point out that the fire service and corrections have not yielded much research on handling of prisoners during disaster events. Much has been written on fire prevention, but the idea of reducing problems during actual evacuations is often neglected (p. 1).

The literature review begins by identifying jail staff preparation methods for evacuations and emergencies. Several guidelines and governing bodies provide some reference as to how jail staff should prepare for evacuations. The 2011 Edition of the Ohio Fire Code (OFC) categorizes jails as an I-3 use group. The OFC requires evacuation plans, drills, and training for I-3 facilities. Drills are required "quarterly on each shift" and "shall be held at unexpected times and under varying conditions to simulate the unusual conditions that occur in case of fire" (p.70). Varying conditions and unexpected times are not defined, however. The OFC dictates that employees should receive training on evacuations during "new employee orientation and at least annually thereafter", but specific material to be covered and the amount of time dedicated to the topic of evacuations is also not outlined (2011, p. 70).

Beightler, Dempsey, Eiser, and et al (2008) created a reference guide and checklist for Ohio jail administrators. Emergency preparedness and evacuations are included in this guide. Similar to the OFC, the guide outlines the need for training on evacuations and emergency plans but no specific objectives are described (pp. 42-44). The guide also does not mention how often training should be conducted.

Schwartz and Barry (2009) discuss planning for emergencies in their report created for the National Institute of Corrections. They declare good preparation can prevent events from happening and help resolve the incidents when they do occur (p. 128). Guidelines should be consistently reviewed and the use of simulations is also favored (p. 180). The plans must be oriented to jails and must be generic in nature. If plans are taken from other fields or disciplines and if plans are hazard specific then complications will arise (Schwartz & Barry, 2009, p. 8). Schwartz (2009) in the Journal of Emergency Management writes that "all-risk" plans are becoming the norm; the plans may include subsections directed at specific hazards, but the plan

overall should be comprehensive (p. 77). Hamel (2002) on the other hand, feels plans should be specific to the type of emergency (p. 83). Schwartz (2009) states "emergency preparedness must be a "system" that is far more than a plan" (p. 77).

Schwartz and Barry (2009) also created a checklist which can be utilized by jail personnel. Some of the requirements preferred are: provisions for off-site evacuations, mutual-aid contracts with other police agencies, and minimum training levels of staff. Specifically, Schwartz and Barry (2009) mention eight hours of initial emergency plan training with four hours of follow-up training every two years (p. 49). Also mentioned is training on the use of self-contained breathing apparatus (SCBA) and refresher training every twenty-four months (pp. 96-97). The Ohio Department of Corrections offers guidelines for SCBA use but these guidelines are only applicable to prisons and do not currently apply to county jails (ww.drc.ohio.gov/). Schwartz and Barry (2009) inquire if corrections staff have met evacuation guidelines within the last year and are evacuations timed for efficiency (p. 98). Hamel (2002) also feels plans should be timed to monitor efficiency (p.3).

Boyce (2005) is more stringent with respect to emergency training. Boyce (2005) states drills should be conducted monthly by each operational shift. Boyce (2005) stresses that it essential for correctional facilities to pre-plan and coordinate emergency operations with the local fire department (p. 38). Pierson (2003) reports exercises should include facility staff, mutual-aid corrections, police agencies and non-police agencies that would be able to assist during an emergency event. Plans must be exercised and not strictly used as documentation according to Pierson (2003, p. 86).

The issue of training for an evacuation or disaster is common to corrections and the fire service. Similar training techniques can be utilized by both fields. Holloway (2007) promotes

the plan of "full-scale emergency response exercises". Holloway (2007) states the "process typically encompasses four main elements: 1) orientation seminar, 2) tabletop exercise, 3) functional exercise, and 4) full-scale exercise." Holloway (2007) draws particular attention to the tabletop exercise as Holloway believes the tabletop "maximizes learning . . . while consuming only a small amount of resources" (p. 48).

Loflin and Kipp (1997) discuss the topic of risk management and identifying risks before emergencies occur. To manage risks Loflin and Kipp (1997) promote a "5 step process: 1) risk identification; 2) risk evaluation; 3)priority setting; 4) design and implementation of risk control techniques; and 5) periodic program evaluation." By following this process Loflin and Kipp (1997) believe a fire department can prioritize risks. Risks that are "high frequency/high severity" should be the first priority, followed closely by events that are "low frequency/high severity". Once the priority risks are identified, the fire department can use "SOP's", "training and education," and "pre-planning" to mitigate and reduce the risks (Loflin & Kipp, 1997 pp. 4-5). This risk matrix is similar to the one developed by Gordon Graham.

According to Smith and Tremthick (1998), who completed a study on fire evacuations for schools for the deaf, "emergency management takes on special significance for high-risk populations." Study findings indicated emergency responders should be included during resource identification for evacuations. Responder participation enables responders to "become familiar with facility layout." The study also indicates that emergency plans need to be nationally developed for "fire, snow and ice, tornados and hazardous materials" (Smith & Tremthick, 1998 p. 24).

Multiple authors stress the importance of planning for emergencies before events occur. The on-line course "Pre-Incident Planning" by White (2010) specifies pre-incident planning is

crucial for success on the emergency scene and information obtained during the pre-incident planning stage should be forwarded to mutual-aid departments. White (2007) advises pre-incident planning also enables emergency personnel to identify responder and response weaknesses. Smith (2002) indicates pre-incident planning should focus on "high life safety" structures, structures with increased firefighter safety concerns, and structures "with unusual or demanding characteristics" (p. 6). Jaeger (2008, Cote Editor in Chief) writes that planning and training are key to hazard mitigation in correctional facilities. Each crew should perform quarterly drills and fire brigades are optimal (Ch. 14, p. 137). Broz, Levin, Mucha, et al (2009) completed a study on the aftermath of Katrina victims who were evacuated to facilities in Chicago. One finding of the study indicated although preparedness training had been previously completed the respondents still felt planning and training were inadequate (pp. 1497-1498).

As previously mentioned, response to correctional emergencies and evacuations typically involve both correctional staff and emergency responders. The responses made by these two groups are intertwined so the literature review obtained by the author in response to jail personnel tactics and fire department tactics will be addressed in conjunction with one another. The findings in the literature review focus on several key factors: use of mutual-aid resources, hazardous smoke control, SCBA utilization by jail staff, and use of evacuation and protect in place tactics.

Coleman (2001) points out it is not uncommon for responders to arrive at a corrections emergency and find a ratio of fifty victims per on scene firefighter. Firefighters could become overwhelmed very quickly attempting to rescue such a large number of occupants (p. 156). Mutual-aid would be ideal for this situation. Schwartz and Barry (2009) created the check-list for jails. Two components of this extensive list are the use of mutual-aid police entities and the

identification of "allied" agencies such as emergency responders (p. 62). Beightler, Dempsey, Eiser, et al (2008) also identify mutual-aid agencies as a crucial component to mitigating emergencies (p. 44).

Smith (2005) writes that due to the secure nature of doors and windows in correctional facilities positive pressure ventilation may not be the first option, nor may it be achievable at all. For this reason, other methods of smoke control must be identified (p. 18). Coleman (2001) advises during jail fires, firefighters should focus on extinguishment and ventilation. This tactic may save more lives than attempting an evacuation by fire personnel (p. 151). Terpak and Viscuso (2011) identify the heating, ventilation and air conditioning unit (HVAC) as a useful tool for removing smoke and protecting building occupants (pp. 42-43). Jaeger (2008) also identifies the HVAC system as crucial for protection against smoke (Ch. 14, p. 136).

In order to provide protection for emergency responders and to provide quick access to detainees in smoke conditions, SCBA use by correctional staff can be critical. Flynn (2010) discusses several case studies involving prison and jail emergencies. During an event in Maryland the corrections officers, who trained with the county fire department prior to the event, utilized SCBA's and hoselines to protect detainees; no deaths occurred during the incident (pp. 30-36). Smith (2005) reports many jails send their personnel to train with fire departments on fire safety and fire equipment use (p.40). During two fires at the Pima County Adult Detention Center in 2005, jail staff utilized SCBA's and nomex suits to perform pod evacuations and reduce the number of injuries to inmates (Boyce 2005, pp. 37-39). Schwartz and Barry (2009) inquire are SCBA being used by trained staff and are refreshers provided to staff on the use of SCBA every twenty-four months (pp. 96-97)?

When it comes to the protection of detainees, the authors offer varying opinions on the preferred tactic. Most of the authors prefer some form of evacuation, either evacuating a section of a facility or evacuating the whole structure. Fewer researchers prefer the tactic of protecting occupants in place.

During the Pima County Adult Detention fires the pods adjacent to the fire area were secured while inmates in the fire rooms were evacuated to the secure pods (Boyce 2005, pp. 37-39). Inmates were evacuated to a safe area in the facility as opposed to evacuating outside of the building. Flynn (2010) reports on a jail fire in Maryland where, again, inmates were moved to another area of the facility (p. 32). Smith (2005) feels the ideal evacuation tactic is to move occupants to a secure, outdoor area (p. 40).

Coleman (2001) on the other hand states the primary strategy is should be to protect detainees in place (p. 151). The aforementioned potential of fifty to one ratio of detainees to firefighters makes an evacuation difficult. Coleman goes on to report it may be necessary to place a few detainees in harm's way in order to protect the larger population (2001, p. 158).

Jaeger (2008) contends both evacuation and defend in place are viable options. The preferred tactic is dictated by the situation. If a secure outside area is available, a full evacuation may be justified, whereas in other instances moving from one section of the building to another may be preferred (Ch. 14, p. 135).

The overall tone of the literature review indicates the key to preventing or reducing risks at emergency jail evacuations is through proper planning and inter-agency cooperation. Multiple authors cite the importance of having adequate plans that are consistently reinforced and reviewed. Response tactics focus on mutual-aid resources, smoke control, use of SCBA's, and evacuation versus protecting in place. The literature review led me to try to determine several

key components through surveys. How do jails and fire departments work together? What training are jail staff conducting to prepare for evacuations? What training are fire departments conducting to prepare for evacuations? What tactics are currently being used by jail and fire department personnel with respect to evacuations and detainee protecting during an emergency?

Procedures

Upon acceptance of the ARP proposal, the literature review and original research was initiated. The descriptive research method was identified as the ideal method to achieve the goal of answering the research questions. Two surveys were developed in an attempt to answer the following research questions: a) How do jail personnel prepare for emergency evacuations at county jails? b) How do fire department personnel prepare for emergency evacuations at county jails? c) What tactics do jail staff currently use during emergency evacuation events? d) What tactics do fire department personnel currently use during emergency evacuation events? The first survey was focused on State of Ohio county jails. The second survey was directed to the fire departments which provide coverage to those county jails.

The initial phase of research development involved identifying the target audience of the first survey. While I recognized valuable information could be gathered by polling all correctional facilities in Ohio or nationally, based on the fact the PTFD responds to the Erie County Jail the decision was made to focus the first survey on county jails in Ohio. The second survey focused on the fire departments that provide protection to those facilities. Ohio Revised Code (ORC) dictates the county sheriff of each county in Ohio will be responsible for the oversight of the county jail. The ORC also provides the guidelines by which the sheriffs must enforce within the county jails (ORC Chapter 341: Jails). The fact that the sheriffs must adhere

to ORC versus federal corrections and prison guidelines was the primary determining factor for limiting the first survey to Ohio county sheriffs only.

A secondary factor for limiting the survey to county sheriffs and not all State of Ohio correctional facility operators, was the differentiation between jails and prisons. A jail typically houses persons convicted of misdemeanor offenses and persons awaiting trial, whereas prisons typically house persons who have been convicted of felony charges (Daron Hall, 2006). This distinction between the two types of facilities results in the facility operators being required to adhere to different governing bodies and guidelines.

The third and final factor for limiting the first survey to county sheriffs was the level of service provided by county jails. According to Ohio Administrative Code (OAC) there are four levels of service provided by jails: full-service jails, twelve day jails, twelve hour jails, and temporary holding facilities (OAC 5120:1-7, 2005) The county jails are typically full-service jails. Again, this distinction in classification determines the guidelines the county sheriff must adhere to when operating a jail.

Once the decision was made to focus on State of Ohio county sheriffs for the first survey, I determined limiting the second survey to the fire departments that provide coverage to those jails was the most logical decision. I felt including fire departments that responded to correctional facilities other than county jails could result in misleading and conflicting data based on the different guidelines the various types of correctional facilities must adhere to. While I noted valuable information most likely could be obtained from fire departments that respond to differing correctional facilities, the decision was made to focus on fire departments that responded to full-service county jails.

I also considered sending the second survey to emergency medical departments that provide services to county jails. However, since the research primarily focused on fire and disaster response and not medical treatment, the decision was made to eliminate emergency medical departments from the survey population. I felt if further research was conducted, emergency medical departments would be a potential research source.

After determining the target research audience, the next step of the research process was creating the surveys. The decision was made to create two surveys which contained questions that were duplicated in both surveys and questions that were exclusive to the either the jail survey or exclusive to the fire department survey. I initially attempted to create subsections in the surveys to focus specifically on the research questions. The first drafts of the surveys however neared a hundred questions for each survey. An extensive review process was completed and the survey rough drafts were presented to several PTFD officers for review. After some editing the surveys were narrowed down to twenty-three questions each and a final question on each survey for respondents to provide any further information deemed valuable to the research process. The surveys covered topics such as: basic demographics of the jail and fire department, events which have led to evacuations, events that have been planned for, training that has been conducted, tactics utilized, and risks that have been identified.

The questions were primarily multiple choice questions. Questions were almost equally divided between questions which required one answer and questions that allowed for multiple answers. Most questions provided an "other" option for respondents to provide an answer not listed. If the respondent chose "other" as a response then the respondent was provided a box to fill in their answer. While this option allowed for more information to be retrieved, tabulating responses became more difficult. I was required to try to interpret the intent of the respondents'

answers which could lead to incorrect data. I was also required to try to group the respondents into categories which could also lead to misleading information.

Once the surveys were created I set out to determine the best method of delivering the surveys. Several avenues were considered for survey distribution. Sending the surveys by mail and fax were considered but these methods would involve a significant cost factor for either me or the respondents. Mailing the surveys could also create an unwanted time factor; the surveys would be sent, the respondents would need a length of time to complete the survey, and the completed surveys would have to be sent back to me. If fax was utilized then the respondents would incur the cost of paper. I determined these methods were not ideal. I determined the easiest method to disperse the surveys would be through email, and the decision was made to utilize the survey website Surveymonkey.com to create and disperse the surveys. Once the surveys were created, Surveymonkey.com provided a web-link for respondents to click on. The link would allow respondents to access and complete the survey on-line. Surveymonkey.com collected all the respondent data and I was then able to collect and analyze the information through on-line tools provided by the website.

For the first survey I created a cover letter with an introduction and an explanation of the intent of the survey. The cover letter contained a hyperlink to the sheriffs' survey at Surveymonkey.com. The cover letter was submitted by e-mail to Erie County Sheriff Paul Sigsworth. Sheriff Sigworth forwarded the cover letter to Executive Director Robert Cornwell of the Buckeye State Sheriffs' Association. Director Cornwell then dispersed the cover letter to the State of Ohio county sheriffs via e-mail. Director Cornwell requested the sheriffs complete the survey to assist with the research project. Seventy-nine sheriffs were e-mailed by Director Cornwell. This number constitutes the full amount of sheriffs that oversee Ohio county jails.

The second survey proved to be more challenging. I contacted several state fire service organizations, none of which were able to provide a database of fire departments responsible for county jail fire protection. The organizations were also not able to provide e-mail addresses for State of Ohio fire departments. I was advised many State of Ohio fire departments have not adopted a formal e-mail system for communication. I determined the only way to identify the fire departments responsible for providing services to the county jails was to make contact with someone in each of the county sheriff departments and ask for the information. Over the course of two days I made phone calls to the county sheriffs and was able to obtain the identification for each fire department that provides protection to each respective county jail. I then utilized the internet to locate the websites for the fire departments. The majority of websites provided an e-mail address to the fire chief, a staff member, or a general fire department e-mail address. For departments that either did not have an e-mail address or a website I made phone calls to request e-mail addresses.

Once the fire departments were identified and the e-mail addresses were obtained, a second cover letter with a hyperlink to the second survey on Surveymonkey.com were sent to the fire departments via e-mail. I performed this task by sending a mass e-mail to the initial e-mail addresses that were obtained. As fire departments responded to the phone messages left by me, I sent out individual e-mails. Sixty-three e-mails were sent to fire departments that provide coverage to county jails. The remaining phone messages left by me were not responded to.

The research, specifically the surveys, does have some limitations. The first limitation is researcher bias and/or ignorance. The survey was created by me; therefore it is limited to my views of what is important. The method of dispersal encountered some roadblocks; not all of the fire departments utilized e-mail, nor did all of the departments respond to phone messages.

Therefore, more surveys were sent to sheriffs than fire departments. After sending the surveys I recognized some questions did not allow for the most accurate answer. For example, Question 2 of the sheriffs' survey asks the respondent to provide the average number of annual emergency responses made to the jail. However, the first answer choice is "0 – 5". The respondents are not permitted to differentiate between zero responses and one to five responses.

There are also limitations based on the respondents. The surveys were sent to the sheriffs and the fire departments, but there were no restrictions as to who completed the surveys. Once the e-mails were received the respective sheriff or fire chief could complete the surveys themselves or a designee could be appointed to complete the survey. There are no personal identifiers in the survey questions so there is no way to categorize who completed the surveys. I also requested the surveys be sent to as many jail staff members and fire department personnel as deemed necessary by the respective department heads, but without identifiers there is no way to determine how many surveys are from different institutions or if there are completed surveys from multiple members from the same jail or fire department.

Another limitation is the narrowing of the topic itself. I made the decision to limit the research to events involving fire and emergency disasters. Prison riots and hostage events were excluded due to the fact these events are primarily law enforcement events. Typically, the fire department would not respond to these events until the jail staff had the situation contained. I also decided to limit the research to fire department responses and exclude emergency medical services. The decision to exclude the emergency medical services was done in order to streamline and narrow the research population.

A final notation must be made. Upon completion and dispersal of the surveys, I continued with further literature review. During this process I identified the National Institute of

Corrections (NIC) report "A Guide to Preparing for and Responding to Jail Emergencies" as a source to be cited. In this report a checklist for jails is provided. I noted multiple questions on the checklist were similar to questions prepared by me for the research surveys. The similarity between these respective documents is strictly coincidental as the surveys were developed prior to the identification of the NIC report. On a positive note the checklist points provided some affirmation to the validity of my survey questions.

Results

Results of the research were obtained from the two surveys which were dispersed to the Ohio county sheriffs and the respective fire departments that provide fire coverage to the county jails. Seventy-nine surveys were distributed to the sheriffs and sixty-three surveys were sent to the fire departments respectively. Twenty-six surveys were collected from the sheriffs equaling a thirty-three percent return. Twenty-seven surveys, totaling forty-three percent, were collected from the fire departments. The majority of the questions were repeated for both surveys with some minor language changes to make the questions pertinent to either corrections or the fire service. There were a few questions specific to each group. Responses for the sheriff respondents will be designated by "SR". Responses for the fire respondents will be designated by "FR". Several questions provided background information; however, the majority of questions were intended to answer the four research questions.

The first two questions from both surveys were proposed to provide some general background information about the respondents' organizations. The first question for the sheriffs' asks for the average detainee population of the jail facilities. Responses were evenly distributed among the range of choices. The highest percentage of SR, 26.9%, indicated populations of more than four hundred occupants are housed in the jails. The smallest group, 11.5%, reported a

population of "less than 50." The same question was posed to the fire departments to determine the jail populations for which fire protection was provided. The FR were also evenly distributed with the largest group, 28%, indicating a population of "50 - 100" and the lowest, 2%, reporting "More than 400" detainees.

The second question of the sheriffs' survey asked for the average annual emergency responses to the jails by the fire departments. By far, at 88.5%, the most SR reported an annual response of "0 - 25". The second question proposed to the FR asked for the initial response manpower level made to the jails during an emergency. Forty percent of the FR arrives with an initial manpower of "5 - 10" personnel. The remaining FR were evenly distributed, 29.6% each, between a manpower of "Less than 5" and "10 - 20".

Question 4 of the sheriffs' survey and Question 5 of the fire departments' survey looked to identify what types of events have already led to jail evacuations. The leading reason for an actual evacuation, on both surveys, was overwhelmingly a "Fire." What is interesting to note though is that on the sheriffs' survey every event type has lead to an evacuation of a facility at least once. These events included fire, hazmat, tornado, flood, severe weather emergencies, and long-term power failures. Question 5 of the sheriffs' survey asks for the amount of emergency events that result in evacuations annually. Ninety-six percent of the SR reported evacuating less than five times a year. One respondent reported evacuating between ten and twenty times annually. Question 6 of the fire departments' survey asks for the average evacuations as recorded by the fire personnel. Similar to the SR, 92.6% of the FR reported less than five evacuations annually. One FR reported between "5 - 10" jail evacuations annually and one FR recorded an "Unknown" response.

The first question of the research project attempted to determine how jail personnel prepare for emergency evacuations. Several survey questions focused specifically on evacuation drills and planning. Question 3 of the sheriffs' survey asks what types of emergencies SR have an evacuation/response plan for. Respondents were permitted to provide more than one answer for this question. One-hundred percent of the SR had a response plan for fires and 76.9% had a plan for tornados. Hazardous materials incidents also were well planned for at 61.5%. All other events such as flood, rain/wind storm, snow storm, long-term power failure and "others" fell below the 50% response level. The "other" category provided several different answers with no one answer being more dominant than the other responses.

Questions 14 thru 17 of the sheriffs' survey focused on evacuation planning. Question 14 asked how often staff members received evacuation plan training. Forty-one percent responded annually, 25% monthly, and 29.2% advised "other". The other category included seven responses by respondents and nearly all of the responses declared training was conducted "quarterly".

Question 15 inquired how often full evacuation drills were conducted. Twenty-eight percent of the respondents declared drills were conducted annually, 36% declared no full evacuations were conducted and 32% answered "other". The eight "other" responses were evenly split between SR who stated they "never" conduct full evacuations and those who stated they perform full evacuations "quarterly".

Question 16 asked how long it takes for jail staff to perform a full evacuation of the jail. Four SR replied "Less than 5 minutes", five were "5 - 10 minutes", three were "More than 10 minutes", and ten, or 40%, answered the "Time has not been documented". Three "other" responses were varied.

Question 17 requested alternative housing locations for detainees that have been identified by jail staff. The majority of SR, 65.4%, answered "Another Correctional Facility". 15.4% answered "Public Building" and 15.4% answered "other". The other responses were varied with no specific response standing out. It is important to note that 3.8% of SR had not identified another location to move detainees if necessary.

Question 23 asked for the different entities included during jail response plan training. Selection of more than one answer was permitted for this question. Eighty percent of the SR included the local fire department/EMS during planning. The local emergency management agency (EMA), hazmat team, and mutual aid police were also included on planning. Nineteen percent of the SR reported no other entities are included. "Other" was reported by two of the SR, with the lone additional response being the "regional transit authority".

Questions 11 - 13 of the sheriffs' survey focused on SCBA training for jail staff. Question 11 asked if SR were trained to use SCBA. The responses were evenly split with 50% declaring staffs are trained to use SCBA and 50% declaring staffs were not trained to use SCBA. Of the thirteen SR who utilized SCBA, nine received training from the fire department and four did not per Question 12. Question 13 asked for the frequency of SCBA training and eleven of the thirteen SR reported training on SCBA was conducted "Annually".

The second research question tried to identify how fire department personnel prepare for jail evacuations. The objective for the fire departments' survey was similar to that of the sheriffs', focusing on evacuation planning and SCBA training. Question 4 of the fire departments' survey inquired what evacuation/response plans have the fire departments prepared for jails. The fire respondents were in-line with the SR's. The top three events

respectively were fire, hazardous materials and tornados. However, in the case of the fire departments there were four respondents who did not have a fire response plan.

Questions 14 - 17 addressed the issue of evacuation planning. Question 14 asked for the frequency in which fire personnel trained on jail evacuation plans. Twelve of the FR reported no training on jail evacuation plans, four reported training "Semi-annually", and six reported training "Annually". Five FR returned "other" responses, however, the responses were varied and offered no definitive data.

Question 23 asks for the entities included during planning for jail emergencies. Similar to the SR, 88.5% of the FR reported being included in jail planning. The FR also reported that the EMA, hazmat team, local police and mutual aid fire were included but at a much lower percentage. Three FR reported not being included in jail planning.

Question 15 asked for the frequency FR participated in full-scale evacuation drills. The overwhelming majority of FR, approximately 89% between "N/A" and "other" responses, advised the fire department never participates in full-scale evacuations. Three fire respondents reported performing full-scale evacuations annually.

Question 16 inquired about the time necessary to perform a full-scale evacuation. Again the majority of respondents reported not participating in full-scale evacuations so no time was documented. Of the seven respondents that reported a given time for jail evacuation, four of them advised evacuations took "5 - 10 minutes".

Question 17 asked for the location of alternative housing in the event long-term jail evacuation is needed. The two primary responses were "Another correctional facility" with 33.3% of the responses and "Unknown" at 40.7% of the responses.

Questions 11 - 13 of the fire departments' survey focused on SCBA use of jail staff. Question 11 asked if jail staff were trained to use SCBA. 46.2% of the FR advised "Yes", while 26.9% advised "NO". Interestingly, 26.9% of the respondents reported "Unknown" as a response, indicating the fire department staff was not aware if SCBA were being used by jail staff.

Question 12 asked if fire department personnel assisted with jail staff SCBA training. Four responded "Yes", and eight responded "No, Correctional staff perform self training". Again, eight recorded an "Unknown" response. Question 13 asked how often fire department personnel assist jail staff with SCBA training. Two responded the fire department assists with SCBA training "Semi-annually" and one responded the fire department staff assists "Annually".

The goal of the third research question was to identify how jail staff are currently responding to evacuations and emergencies. The sheriffs' survey focused on four areas to address this research question. The survey requested how security systems are handled, where are detainees moved to during an evacuation, where are detainees moved to in relation to emergency personnel, and what hazards and delays during evacuations have been identified by jail staff.

Question 6 and 7 focused on security system management during evacuations. Question 6 determined how door locks respond during a fire or fire alarm. Twenty-three percent of SR advised specific zones of the facility unlock automatically during an alarm. Nineteen percent reported doors must be manually unlocked. Fifty-seven percent gave an "Other" response and identified a combination of automatic unlocking and manual unlocking were necessary during an alarm.

Question 8, 9, and 10 focused on detainee movement during alarms and fires. The SR were given the option of choosing more than one answer for these questions. Question 8 looked at how detainees are protected during a reported fire. The majority of SR, 69.2%, indicated detainees are evacuated from the section of the building where the fire is occurring. Approximately half of the SR reported using each of the following procedures: sheltering in place, evacuating an individual cell only, and evacuating the entire facility. Four SR advised the technique utilized to protect detainees is situational.

Question 9 addressed typical detainee protection during a fire alarm. In the instance of alarms 80.8% of the SR keep detainees in place until a fire is confirmed. Thirty-four percent may evacuate the effected zone and 15.4% may evacuate the facility.

Question 10 inquired about detainee protection from hazardous smoke. Again, the SR were given the option to choose more than one answer. Eighty-eight percent of the SR will move the detainees to a safe area in the facility. While, 30.8% evacuate the structure and 15.4% will protect detainees in place. Forty-six percent attempts to protect occupants by removing smoke utilizing the heating, ventilation and air conditioning system (HVAC) and 23.1% remove smoke by opening doors and windows. Two respondents reported the technique to protect detainees is situational.

Question 18 identified where detainees are moved during a fire event in relation to the location of fire personnel. Forty-one percent of the SR advised detainees are moved to a common outside area with additional law enforcement called to assist. While 37.5% of the SR reported detainees are moved to a secure, outside area. Three of the SR move occupants to a secondary facility and one advised moving occupants to a common outside area with no additional law enforcement called to assist.

Question 19 identified who is responsible for physically evacuating detainees during an emergency. Forty-six percent of the SR advised evacuation is handled by jail staff only compared to the 30.8% which indicated jail and fire department personnel assist with evacuating detainees. No respondents indicated evacuations are handled by the fire department staff only. Twenty-three percent of the SR provided an "Other" response with the majority indicating evacuations were handled by jail staff with the help of road deputies and/or mutual-aid law enforcement.

Questions 20 thru 22 looked at hazards or delays to jail occupants, staff, and fire personnel that have been identified. Respondents were permitted to check more than one answer for all three of these questions. Question 20 focused on hazards or delays affecting detainees. The majority of SR, 52.2%, felt there were either no hazards/delays during evacuations or no hazards/delays have been identified. Thirty percent indicated evacuations were delayed due to facility design and layout. Seventeen percent reported inadequate staffing as a concern. Thirteen percent felt staff unfamiliarity with procedures was a problem and 13% felt staff not being familiar with equipment, such as SCBA, was a problem. Two respondents believed fire personnel not being familiar with the facility was an issue. One respondent felt evacuations were delayed due to security systems.

Question 21 identified hazards to jail staff during evacuations. Thirty-five percent of the SR reported delayed evacuation for staff due to inadequate staffing to perform the evacuation was a hazard, and 35% indicated there was a potential increase of staff injury due to being assaulted by detainees. Whereas 25% felt facility design delayed jail staff from evacuating, 15% felt staff were at risk due to inadequate training with equipment such as SCBA. One

respondent felt staff was at risk due to lack of facility familiarity. Thirty percent of the JR felt staff were either at no risk or no risks had been identified.

Question 22 focused on fire personnel risks identified by jail staff. Forty-two percent of the SR felt fire personnel were at risk due to lack of familiarity with facility design or layout, and 19% felt the danger was due to lack of familiarity with security systems. Twenty-eight percent of the SR believe firefighters are susceptible to assault by detainees. By contrast, 38.1% of the SR believe either firefighters are not at risk or no risks to firefighters have been identified by jail staff.

The final research question is addressed by the fire departments' survey and attempted to identify the current tactics used by fire departments when responding to jail emergencies and evacuations. Survey questions were focused on the areas of security system management, detainee protection and movement, and hazards or delays during evacuations as identified by fire personnel.

Question 7 attempted to identify if fire personnel are aware of how jail security systems respond to fire alarm activation. Forty-four percent of the FR reported doors must be unlocked manually. Eighteen percent of the FR advised specific zones automatically unlock. Twenty-five percent of the FR registered "Unknown" in response to the question.

Questions 8, 9, 10, 18, and 19 looked at how detainees are moved or protected during an evacuation. Respondents were permitted to choose more than one answer for questions 8, 9, and 10. Question 8 asked how detainees are evacuated during a fire, to which 66.7% of the FR indicated detainees were moved to another section of the building. Forty-eight percent reported the shelter in place technique was utilized and 33.3% reported only the detainee cell affected was

evacuated. The lowest number of responses, 29.6%, advised the entire facility was evacuated during a fire.

Question 9 asked FR to identify what tasks are completed by jail staff prior to the fire department arrival. Approximately half of the FR indicated detainees were kept in place until confirmation of a fire, while half indicated the affected zone was evacuated. Two respondents reported a full facility evacuation is initiated during a fire event, and two FR reported not knowing how jail staff responded prior to fire department arrival.

Question 10 looked at what is done to protect detainees from hazardous smoke. The majority of FR, 76.9%, advised detainees are moved to a safe area of the jail. Approximately a third of the respondents indicated detainees are protected in place and the structure is evacuated. Fifteen percent utilize the HVAC system to remove smoke, and 19.2% utilize positive pressure ventilation. Vertical ventilation and natural ventilation received two and one responses respectively.

Questions 18 identified where detainees are moved in relation to arriving firefighters. Forty-eight percent of the FR indicated detainees are moved to a secure outside area. Thirty-two percent reported detainees are moved to a common outside area with additional law enforcement called to assist with security. Finally, 12% of the FR indicated a secure secondary facility was utilized for evacuated detainees.

Question 19 looked at who actually assists detainees from the jails during evacuations. The overwhelming majority, 73.1%, indicated detainees are evacuated by correctional staff only. While 23.1 % of the FR advised jail and fire department staff evacuate occupants, no respondents indicated evacuations were handled by fire personnel only.

Hazards and delays to occupants and responders during evacuations are addressed by Questions 20 thru 22 of the fire departments' survey. The FR were permitted to choose more than one answer for each of these questions. Question 20 focused on detainee safety. Similar to the sheriffs' survey, all of the hazards provided as an option were chosen at least once. The greatest safety concern identified was evacuation delay due to inadequate jail staffing. Insufficient training on equipment by jail staff, such as SCBA, was the lowest recorded response at 8.7%. Delays due to facility design, facility security, jail and fire staff unfamiliarity with procedures, and insufficient firefighter personnel on arrival were also identified as potential concerns. Several respondents chose "Other" as an option, with two indicating there were no concerns and one reporting hazards were "Unknown".

Hazards to correctional staff were recorded in Question 21 with results being nearly identical to Question 20. Two differences noted were a slight increase in responses reporting concerns with jail staff familiarity with equipment resulting in smoke exposure and the possibility of assault from detainees. The potential assault of jail staff by detainees was selected by 19.0% of the FR.

Question 22 tried to identify hazards to fire personnel. The greatest concern of the FR, 56.0%, was potential firefighter entrapment due to lack of familiarity with the jail layout, and 32.0% felt entrapment due to lack of familiarity with security systems was an issue. Forty-eight percent felt potential assaults by detainees was a concern. One respondent felt firefighters becoming locked in an evacuated area was a potential hazard.

The final question of the both surveys allowed the SR and FR to provide any further information regarding jail evacuations deemed pertinent and to request a final copy of the author's applied research project. Ten of the SR requested a final copy, however, only two SR

provided any further information. The first reported the "Fire Policy" is currently being updated. The second advised "Fire Drills including partial and full evacuations are completed once per quarter on each shift with supervisory overview and complete documentation". Four of the FR requested a copy of the finalized report. One respondent noted the "survey did not distinguish between fire and EMS response which affected the answer to some questions."

The full results of the sheriffs' survey are provided in Appendix A. The full results of the fire department survey are provided in Appendix B.

Discussion

There were two primary goals of the research conducted. The first goal was to determine how fire and jail personnel prepare for emergency jail evacuations. The second goal was to identify the tactics currently utilized by jail and fire personnel when responding to jail evacuations. Identifying the preparatory procedures and tactics utilized by jail and fire personnel during evacuations could potentially reduce the risks associated with evacuations. The literature review findings indicated several keys to efficient emergency operations. These critical factors included consistent training, coordination between jail and fire personnel, inclusion of mutual-aid entities in planning and response, and a thorough familiarity with building designs and security systems. The research conducted attempted to verify whether fire and jail personnel identified these same factors as important and to what level personnel have responded to these factors.

Prior to addressing training and tactics of fire and jail personnel it is important to look at what these groups are up against with respect to evacuations. Coleman (2001) writes about the fact initial arriving firefighters at a jail evacuation may face the dilemma of a victim to firefighter ratio of fifty to one. The research results seemed to reinforce this projection. The majority of SR

indicated a population of over four hundred inmates, while most of the FR reported an initial manpower response of five to ten personnel. The survey numbers indicate victim to firefighter ratios may range from forty to one or even eighty to one. These odds are not to the fire departments advantage. Both survey groups reported minimal responses and evacuations annually, therefore the frequency of evacuations are not great. Yet, there seems to by a high life-safety risk during evacuations and emergencies. Loflin and Kipp (1997) point out "low frequency/high severity" events must be identified and prepared for through pre-planning and training. These conclusions appear to also ring true for the PTFD. The PTFD typically responds to commercial fire alarms with four personnel. The ECJ routinely houses over one-hundred detainees, creating a detainee to firefighter ratio of twenty-five to one. Add the potential of jail staff being victims during an emergency event and the ratio can become even greater.

The literature review and research first focused on preparation for emergencies. Multiple authors, researchers, and governing bodies identify pre-planning, training, and collaboration between stakeholders as essential to preventing and reducing risks during emergency events. The Ohio Fire Code (2011) requires quarterly drills for I-3 institutions and Jaeger (2008) also supports quarterly training for correctional institutions. Boyce (2005) emphasizes more stringent training and suggests monthly training. The results obtained from the survey respondents prove training is being conducted but the frequency is sporadic amongst the SR. Some respondents reported conducting training and evacuation annually, others reported quarterly, and some indicated evacuation drills were never conducted. The FR seemed to follow suit. The suggestions for frequency of training obtained in the research shows the PTFD has fell below the recommended guidelines.

The literature review indicated emergency plans need to be all-hazard plans. Schwartz and Barry (2009) stress plans should be geared towards jails but not event specific. Schwartz (2009) identifies that broad-based plans are becoming commonplace and the industry standard. The survey respondents indicate both jail and fire personnel have identified multiple hazards that may require evacuations. However, both groups seem to emphasize response to fires versus creating all-hazard plans. The PTFD's training with the ECJ has been minimal over the years, however, when training has been conducted the focus has always been fire safety. Again, the relationship between the PTFD and the ECJ seems to follow the survey findings. Training between the two entities has been too narrow in scope and too intermittent in completion.

Pierson (2003) stresses the importance of multiple agency collaboration when training and preparing or emergencies. Boyce (2005) advises that correctional facilities must train with the local fire department. When researching evacuations for deaf students, Smith and Tremthick (1998) discovered the importance of emergency responders participating in evacuation planning. Despite the majority of SR indicating the fire department was included during emergency planning, the majority of FR reported never receiving training on jail evacuation plans and never participating in full-scale evacuation drills.

The researchers from the literature review staff utilizing SCBA to assist with detainee evacuation and protection. The researchers also emphasize fire personnel as useful resource to assist in SCBA training for jail personnel. Schwartz and Barry (2009) make SCBA use a critical point of the checklist for jail personnel. The Ohio Department of Corrections require SCBA use for prison personnel, but unfortunately do not currently require the same for jail staff. Flynn (2010) and Boyce (2005) describe several events where positive outcomes were due in some part to correctional staff utilizing SCBA. Smith (2005) advises jail staff often train with fire

personnel on equipment use. In one event described by Flynn (2010) the corrections officers that utilized the SCBA received prior training from the local fire department. Approximately half of the survey respondents indicated SCBA's were being used by jail staff. Of the JR who replied staff do utilize SCBA's, approximately two-thirds reported receiving training from the local fire department. However, very few of the FR indicated fire personnel assist with jail staff SCBA training. The ECJ staff currently use SCBA, and although the PTFD has conducted training with jail staff on the use of SCBA in the past, training has not been conducted in multiple years.

The second major goal of the applied research project was to identify what tactics fire and jail personnel are presently using during jail emergencies and evacuations. The literature review revealed several areas of focus. The tactics of evacuating versus protecting in place and removing hazardous smoke were emphasized in the literature review. The research attempted to identify how jail and fire personnel currently handle these tactics. SCBA use by jail staff and utilization of mutual-aid agencies were also identified as important tactical components, however, these topics were discussed previously.

Ventilation of hazardous smoke has been identified by multiple researchers as a critical tactic during fire events. Coleman (2001) writes that ventilation may often be the first priority during a jail fire. Coleman predicts performing ventilation may be more successful at saving detainee lives than evacuating the structure. Smith (2005) advises due to the secure nature of jails, positive pressure ventilation may not be an option and other methods of ventilation may be necessary. The preferred technique for removing hazardous smoke according to the other authors seems to be the utilization of jail HVAC systems (Terpak and Viscuso 2011 and Jaeger 2008). Although use of HVAC systems was identified by the SR and FR as a means to protect detainees from smoke, the overwhelming majority of respondents identified moving detainees to

a safe area of the jail as the most utilized tactic. ECJ and PTFD personnel need to come to a consensus on the best method for protecting detainees based on the tactical options available.

With respect to the decision to evacuate the structure, evacuate a section of the building, or protect occupants in place, the literature review was inconclusive. Boyce (2005) describes how during the Pima County Adult Detention fire, inmates were protected by being moved to a safe area in the facility. Yet, Smith (2005) feels inmates should be moved to an outside area and Coleman (2001) writes inmates should be protected in place. Jaeger (2008) contends evacuation and protecting in place are both viable options and the situation will dictate the preferred the tactic. The original research conducted was also inconclusive. Both jail and fire respondents reported utilizing increasing levels of evacuation during fires and fire alarms, but the leading response on both surveys was to move detainees to a safe area within the jail. Both surveys also indicated evacuations are typically handled by jail staff without the assistance of fire personnel. In the event of an actual fire both surveys indicated detainees were typically moved to a secure outside area. The inconclusive nature of the research seems to signify ECJ and PTFD personnel must work together to identify which evacuation tactic will best suit the objectives of both organizations.

The goal of identifying how jail and fire personnel prepare for evacuations has proven successful but with limitations. The research indicates fire and jail personnel should collaborate on pre-emergency planning and training. While this training does occur to some extent, the training does not happen on a consistent basis. The lack of consistent training is indicative of the current relationship between the PTFD and the ECJ. While the PTFD and the ECJ have performed joint training in the past, during recent years the training has been sporadic and

unpredictable at best. The surveys seem to show evacuation training is not consistently conducted throughout the county jails.

The research also indicates to maximize jail occupant safety, jail personnel should utilize SCBA to assist with evacuations. The surveys show half of the SR do currently utilize SCBA, however, minimal training is conducted with fire personnel. While, training with fire personnel is not required it seems natural fire department staff should assist with such training. ECJ staff currently utilize SCBA, but again, training with the PTFD has been erratic at best. The PTFD provides assistance with SCBA maintenance and equipment testing, however, collaborative training on SCBA familiarity and proficiency by jail staff and fire personnel has not been completed in years.

The second goal of identifying the tactics currently utilized by jail and fire personnel when responding to evacuation emergencies was also successful. The research identified that jail staff typically handle evacuations. The research shows multiple tactics are utilized to protect detainees. Increasing levels of evacuation are used; from evacuation a building section to evacuation of the entire facility. Protecting detainees in place was also recognized as a preferred tactic. The research identified protecting detainees from hazardous smoke by utilizing the HVAC system is also a preferred tactic. SCBA are currently being used by jail staff, but not consistently throughout the county jails. The tactics identified provide a basis for the PTFD and the ECJ to develop joint procedures to help ensure more efficient operations.

One of the major limitations of the research is jail and fire personnel proficiency with respect to evacuations has not been identified. While preplanning, training, and preferred tactics do occur, the research did not identify how well personnel understand and carry out the tactics. Further research to evaluate proficiency and knowledge of these topics by jail and fire

department staff would be beneficial. Research to determine which evacuation tactics provide the best chance to protect jail occupants during an evacuation emergency is also recommended.

Recommendations

The research provides a starting point for collaboration between the ECJ and PTFD staff to develop better emergency and evacuation planning. The research shows both entities must work together to improve the potential outcome during a jail emergency. The collaboration between these entities will help develop better protection tactics and help ensure proficiency during an emergency. Several recommendations can be developed from the literature review and the completed research. The recommendations follow the overall goals of identifying methods to prepare for emergency evacuations and developing operational tactics to be utilized during emergency events which may require full or partial facility evacuation.

The first recommendation is jail and fire department management must develop more lines of communication. A commitment to collaboration must be demonstrated by both department leaders. At a minimum, annual inter-departmental training should be conducted, however, semi-annual would be preferred. Both groups should appoint department representatives forming a committee that would meet annually to develop and review evacuation and emergency procedures. The committee will be able to provide avenues for plan improvement, and exchange information allowing the respective organizational personnel to familiarize themselves with the current operating plans. The review group would also be able to develop an all-hazards emergency plan that would meet the needs of the jail staff and allow the fire department personnel to effectively assist jail staff during emergency evacuations.

The second recommendation is the PTFD should extend the offer to help conduct SCBA training for jail staff on a more regular basis. Semi-annual SCBA training should be offered to

jail personnel by the PTFD staff. PTFD personnel have conducted such training in the past but not in recent years. Fire department SCBA proficiency guidelines could be utilized to assist jail staff with ensuring personnel are ready to use such equipment during an emergency. The aforementioned review group could also develop SCBA proficiency guidelines for jail staff if so requested by the sheriff. By assisting with SCBA training the collaborative relationship will be reinforced, and fire department personnel will also be able to become more familiar with jail operations.

The third recommendation is fire department personnel should receive semi-annual training at the ECJ. This training should be led by or include ECJ staff and should cover several areas. Training should consist of jail layout familiarization, security system familiarization, and identifying methods to control hazardous smoke. Jail and fire department personnel training together will help identify personnel strengths and weaknesses. Fire department personnel should participate in jail evacuation drills to help foster collaboration.

The final recommendation is Ohio county jail and fire department personnel should develop the same training, planning and tactical review committees. Collaboration between entities is necessary to help ensure operational success and help prevent risks. It is counter-productive for jail personnel to develop plans and tactics for emergencies and the fire department staff to do the same without sharing information. Both groups must work together to develop plans that meet the needs of both organizations, and provide the best chance to protect occupants during an evacuation emergency. Both groups must also work together to ensure each organizations' respective staff are proficient on plan knowledge and tactics. The successful outcome of an emergency event hinges on jail and fire department personnel understanding the plan of attack and the tactics necessary to carry out the plan.

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Appendix A

Jail Emergency Evacuation Plans Survey - Sheriffs

1. What is the average number of detainees housed in your facility?

Less than 50	11.5%	3
50 - 100	23.1%	6
100 - 200	19.2%	5
200 - 400	19.2%	5
More than 400	26.9%	7

2. What is the average number of emergency responses made to your facility each year by the fire department which provides coverage to your facility?

0 - 25	88.5%	23
25 - 50	7.7%	2
50 - 100	3.8%	1
More than 100	0.0%	0
Unknown	0.0%	0

3. For what type of emergency events does your facility have an evacuation/response plan? (Please check all that apply)

Hazardous material incident	61.5%	16
Fire	100%	26
Flood	42.3%	11
Tornado	76.9%	20

Severe rain/wind storm	38.5%	10
Severe snow storm	26.9%	7
Long-term power failure	34.6%	9
Other	19.2%	6

Other Responses:

- Most natural disasters are covered
- inmate injuries
- Work/Food Strike; Riots; Bomb Threats
- Evacuation would always be a last resort. Common inside and/or outside areas are available to move to within the perimeter. This facility has several large classrooms, a large gym and several outside recreation or yard areas that are both fenced or walled in. We have several separate units which allows evacuation by unit as needed. Evacuation in the high security areas would be deliberate and slower, as trained and tested.
- Our policy is basically an all hazards policy
- Escape, Hostage Taking, Riot/Disorder, Bomb, Food Poisoning, Suicide (Attempted/Death), Infection Control, Civil Disturbance, Adverse Job Action, Disaster in General

4. What types of emergency events have required a full or partial evacuation of your facility? (Please check all that apply)

Hazardous material incident	9.5%	2
Fire	42.9%	9
Flood	19.0%	4
Tornado	9.5%	2

Severe rain/wind storm	4.8%	1
Severe snow storm	4.8%	1
Long-term power failure	4.8%	1
Other	52.4%	11

Other Responses:

- None (response repeated ten times)
- Bomb threat, earthquake
- Fire (Smoke) Alarm
- Smoke
- N/A (response repeated two times)
- Inmate Disturbance

5. On average, how many emergency events requiring a partial or full evacuation of your facility occur each year, including general fire alarms?

0- 5	96.2%	25
5 - 10	0.0%	0
10 - 20	3.8%	1
More than 20	0.0%	0
Unknown	0.0%	0

6. Upon fire alarm activation, how does your facility security system respond?

All doors automatically unlock	0.0%	0
Specific zones automatically unlock	23.1%	6

Doors must be unlocked manually with keys	19.2%	5
Other	57.7%	15

Other Responses:

- Will unlock once release button has been activated
- Controlled by central control
- Doors remain locked. If the control system fails, then doors are unlocked manually
- Our Jail is part of a larger building that house other county offices. When a fire alarm is activated we ascertain if there is a fire, where the fire is located and how it may or may not affect the jail. If we need to evacuate then the process is started.
- Nothing automatic occurs when the alarm goes off
- Manually unlock door and electronically in Master Control Room
- Both manually and with keys
- Some zones may unlock if the alarm is not acknowledged. We have to unlock 2/3rds of the jail housing areas.
- Doors can be unlocked with keys or the security system has group unlocks
- We electronically unlock
- Doors are unlocked by both key and by electronic control depends on the type of door and the area in which the door is in. All based upon facility security.
- audible alarm and personnel respond
- Fire alarm activation does not affect our door controls. Our doors can all be unlocked electronically.
- Doors remain secure. If by chance doors inoperable - sets of keys are available for use.
- CONTROL ROOM MUST RELEASE THE DOORS

7. If doors must be unlocked manually during an evacuation, how many personnel with "keys" are typically assigned to release detainees?

1 - 2	50.0%	13
2 - 5	19.2%	5
5 - 10	11.5%	3
10 or more	3.8%	1
N/A	15.4%	4

8. In the event of a fire, what procedures are typically used to protect detainees? (Please check all that apply)

Shelter in place	42.3%	11
Evacuate detainee cell	46.2%	12
Evacuate section of building	69.2%	18
Evacuate facility	50.0%	13
Other	19.2%	5

Other Responses:

- We would defend in place and move the effected area
- Depends on circumstances & where fire is at
- Each situation may dictate a different response
- attempt to put the fire out
- Evacuation is based solely upon the risk, most times its moving the inmates to another section of the building

9. In the event of a fire alarm, what procedures are typically used to protect detainees? (Please check all that apply)

Keep detainees in place until confirmation of a fire	80.8%	21
Evacuate the affected zone	46.2%	9
Begin full evacuation of the facility	69.2%	4
Other	7.7%	2

Other Responses:

- Each specific situation will determine a response appropriate to the level of the event.
- Evacuate zone and other affected zones as needed.

10. What techniques are used to protect detainees from smoke during hazardous smoke conditions? (Please check all that apply)

Protect in place	15.4%	4
Move to safe area in facility	88.5%	23
Evacuate Structure	30.8%	8
Remove smoke using HVAC system	46.2%	12
Remove smoke using natural ventilation (open windows/doors)	23.1%	6

Other Responses:

- Each and every situation will dictate a appropriate response to the situation
- Just depends.

11. Are your personnel trained to utilize Self Contained Breathing Apparatus (SCBA) to assist with detainee removal during hazardous smoke conditions?

Yes	50.0%	13
No	50.0%	13

12. Does the Fire Department that provides coverage to your facility assist with your SCBA training?

Yes	34.6%	9
No	19.2%	5
Our facility staff does not use SCBA	46.2%	12

13. How often do staff members train on the use of SCBA?

Monthly	0.0%	0
Semi-Annually	3.8%	1
Annually	42.3%	11
N/A	46.2%	12
Other	7.7%	2

Other Responses:

- rarely
- every other year

14. How often do staff members receive training on facility evacuation plans?

Monthly	25.0%	6

Semi-Annually	0.0%	0
Annually	41.7%	10
N/A	4.2%	1
Other	29.2%	7

Other Responses:

- Quarterly (response repeated eight times)
- When employees are hired they go through this training working with a FTO
- Currently, when the policy is updated annually (if updates are necessary)

15. How often does your facility perform full-scale evacuation drills?

Monthly	4.0%	1
Semi-Annually	0.0%	0
Annually	28.0%	7
N/A	36.0%	9
Other	32.0%	8

Other Responses:

- No actual mock evac, formal review.
- Haven't done full scale evac
- We do not conduct live full scale evacuation drills
- Never
- None
- Quarterly (response repeated four times)

• All evacuations are done internally through drills. We have attempted to arrange full scale drills but have received very little cooperation in setting up this type of drill

• We perform sections of the jail monthly

16. How long does it take to perform a full evacuation of your facility?

Less than 5 minutes	16.0%	4
5 - 10 minutes	20.0%	5
More than 10 minutes	12.0%	3
Time has not been documented	40.0%	10
Other	12.0%	3

Other Responses:

• N/A

• Unknown

• Unit evacuation drills are normally less than 5 minutes

17. What alternative locations for housing detainees in the event of a long-term evacuation have been identified?

Another correctional facility	65.4%	17
Public Building	15.4%	4
Private commercial building	0.0%	0
No alternative has been identified	3.8%	1
Other	15.4%	4

Other Responses:

- Combo of first three choices
- National Guard Readiness Center
- Combination of Another Correctional Facility Private Commercial Building; and Public Building.
- Several are correctional facilities can assist (county jails and two area prisons)

18. During an evacuation due to fire, where are detainees secured in relation to responding emergency personnel?

In a secure outside area	37.5%	9
In a secure secondary facility	12.5%	3
Common outside area with additional law enforcement called to assist	41.7%	10
Common outside area with no additional law called to assist	4.2%	1
Other	4.2%	1

Other Responses:

- Common inside and/or outside areas. This facility has several large classrooms, a large gym and several outside recreation or yard areas that are both fenced or walled in. We have several separate units which allows evacuation by unit as needed. Evacuation in the high security areas would be deliberate and slower, as trained and tested.
- In another section of the jail. If we had to evacuate we could to an outside secure area.
- We have secondary areas inside the building away from the fire area.
- We have a primary and secondary evac route for all housing units. IN the event we had to, they could be evacuated to a secured perimeter outside of the building

19. During an evacuation emergency, how are detainees assisted from the facility?

Correctional staff only	46.2%	12
Correctional staff and FD personnel	30.8%	8
FD personnel only	0.0%	0
Other	23.1%	6

Other Responses:

- Correctional and deputy staff will respond (response repeated five times)
- In a mass evacuation we would use on and off duty corrections staff, support staff, area law enforcement (we are regional so we would request assistance from five area Sheriffs Dept.) We have three 40 seat busses and two 15 seat vans to transport if necessary
- correctional staff, Sheriff Office's Detectives and Enforcement, Police Dept, and State Highway Patrol
- n/a

20. What evacuation hazards or potential hazards to detainees during fire events have been identified by your staff? (Please check all that apply)

Delayed evacuation due to inadequate staffing	17.4%	4
Delayed evacuation due to facility design/layout	30.4%	7
Delayed evacuation due to security systems	4.3%	1
Delayed evacuation due to insufficient familiarity with evacuation procedures	13.0%	3
Delayed evacuation due to correctional staff not familiar with equipment (e.g. SCBA)	13.0%	3
Delayed evacuation due to insufficient emergency	8.7%	2

responder familiarity with facility		
Other	52.2%	12

Other Responses:

- none identified in our plans ("none" response repeated four times)
- When new staff is hired they sometimes forget procedures due to not putting them into practical application
- N/A (response repeated three times)
- We can handle emergency evacuations with correction officers and deputies
- Staff receive extensive training in evacuation systems and are trained to extinguish small fires, they are trained in the electronic evacuation systems and security systems. Each cell has a smoke detector and sprinkler head. Smoke systems are tested by an external company and documented. The facility has a tactical team who's members must live with in 20 minutes to assist. ALL staff are trained and drilled in how to evacuate and extinguish a fire. The facility design aids in isolating smoke and fire. Staff carry radios in case the phones went down. There are back up emergency keys if the locking systems failed.
- Combination of all/some - the reasons could change depending on the day.
- Delays due to lack of inmate cooperation.
- We practice this all the time and we do not believe we have any delay.

21. What evacuation hazards or potential hazards to employees during fire events have been identified by your staff? (Please check all that apply)

Delayed evacuation due to inadequate staffing	35.0%	7
Delayed evacuation due to facility design/layout	25.0%	5

Delayed evacuation due to security systems	0.0%	0
Delayed evacuation due to insufficient familiarity with evacuation procedures	5.0%	1
Delayed evacuation due to insufficient emergency responder familiarity with facility	0.0%	0
Potential exposure to hazardous smoke due to inadequate equipment training (e.g. SCBA)	15.0%	3
Increased potential for assault from detainee during evacuation	35.0%	7
Other	52.2%	12

Other Responses:

- N/A (response repeated two times)
- None (response repeated four times)
- Detection in housing units would be immediate as the facility is direct supervision. Facility is non smoking. Smoke detection is very sensitive. Staff are trained to isolate and contain the smoke and fire. We have several separate units which allows evacuation by unit as needed. Evacuation in the high security areas would be deliberate and slower, as trained and tested. Staff are trained in rebreather gas masks.

22. What evacuation hazards or potential hazards to employees during fire events have been identified by your staff? (Please check all that apply)

Potential for responder entrapment due to unfamiliarity with facility security system	19.0%	4
Potential for responder entrapment due to unfamiliarity with facility layout/design	42.9%	9
Increased potential for assault from detainees	28.6%	6

Other	38.1%	8

Other Responses:

- N/A (response repeated two times)
- No issues - Fire Dept. trains in our facility
- Emergency responders would always have escorts. Detainees would be evacuated from cells/dorms by the time outside agency responders arrived for a fire, detainees would be isolated in the gym, classrooms or outdoor rec yards.
- None have been identified
- Fire Department has copies of our facility plan layout

23. What entities are included during your emergency response plan training?

(Please check all that apply)

Local FD/EMS	80.8%	21
Emergency Management Agency	34.6%	9
Hazmat Team	19.2%	5
Mutual Aid Police	50.0%	13
N/A	19.2%	5
Other	7.7%	2

Other Responses:

- Regional Transit Authority - Public bus services
- Our plans reflect coordination between EMA, local agencies based on the specific emergency. All staff are NIM's trained

24. Please use the space below for any further information you would like to provide regarding emergency evacuation events at correctional facilities.

- Our Fire Policy is in the final stages of being updated.
- Fire Drills including partial and full evacuations are completed once per quarter on each shift with supervisory overview and complete documentation.

Appendix B

1. What is the average number of detainees housed in the correctional facility for which your department provides fire protection?

Less than 50	24.0%	6
50 - 100	28.0%	7
100 - 200	16.0%	4
200 - 400	20.0%	5
More than 400	8.0%	2
Unknown	4.0%	1

2. What is your department's typical initial manpower response to emergency events occurring at the correctional facility?

Less than 5	29.6%	8
5 - 10	40.7%	11
10 - 20	29.6%	8
More than 20	0.0%	0

3. What is the average number of emergency responses made to the facility each year by your fire department?

0 - 25	81.5%	22
25 - 50	14.8%	4
50 - 100	0.0%	0
More than 100	3.7%	1

Unknown	0.0%	0

4. For what type of emergency events does your department have an evacuation/response plan to the correctional facility? (Please check all that apply)

Hazardous material incident	26.9%	7
Fire	88.5%	23
Flood	3.8%	1
Tornado	26.9%	7
Severe rain/wind storm	11.5%	3
Severe snow storm	7.7%	2
Long-term power failure	11.5%	3
Other	15.4%	4

Other Responses:

- None
- In house lock down
- We do not have a specific plan for the co. jail. If we deemed a need for evacuation the co. sheriff would handle evac of prisoners.

5. What types of emergency events have required a full or partial evacuation of the correctional facility your department provides fire protection for? (Please check all that apply)

Hazardous material incident	9.1%	2
Fire	77.3%	17
Flood	0.0%	0

Tornado	0.0%	0
Severe rain/wind storm	0.0%	0
Severe snow storm	0.0%	0
Long-term power failure	4.5%	1
Other	22.7%	5

Other Responses:

- We have not had an evacuation event for decades
- None to date (response repeated three times)
- I am unclear on your question. A fire would cause an evac however this has not occurred to date
- Sprinkler heads going off

6. On average, how many emergency events requiring a partial or full evacuation of the correctional facility occur each year, including general fire alarms?

0- 5	92.6%	25
5 - 10	3.7%	1
10 - 20	0.0%	0
More than 20	0.0%	0
Unknown	3.7%	1

7. Upon fire alarm activation, how does the correctional facility security system respond?

All doors automatically unlock	0.0%	0
Specific zones automatically unlock	18.5%	5

Doors must be unlocked manually with keys	44.4%	12
Unknown	25.9%	7
Other	11.1%	3

Other Responses:

- Cells are opened by control room, upon power loss cells are opened manually by keys
- Doors unlock remotely from a central guard stations
- Doors can be unlocked with keys or from a central control panel that is always staffed until the FD orders it evacuated

8. In the event of a fire, what procedures are typically used to protect detainees? (Please check all that apply)

Shelter in place	48.1%	13
Evacuate detainee cell	33.3%	9
Evacuate section of building	66.7%	18
Evacuate facility	29.6%	8
Other	3.7%	1

Other Responses:

- depending on the magnitude of the situation

9. In the event of a fire alarm, what procedures are typically used to protect detainees by correctional staff prior to fire department arrival? (Please check all that apply)

Keep detainees in place until confirmation of a fire	48.1%	13
Evacuate the affected zone	55.6%	15

Begin full evacuation of the facility	7.4%	2
Unknown	7.4%	2
Other	0.0%	0

Other Responses: No responses given

10. What techniques are used to protect detainees from smoke during hazardous smoke conditions? (Please check all that apply)

Protect in place	26.9%	7
Move to safe area in facility	76.9%	20
Evacuate Structure	34.6%	9
Remove smoke using HVAC system	15.4%	4
Remove smoke using natural ventilation (open windows/doors)	3.8%	1
Vertical Ventilation	7.7%	2
Positive Pressure Ventilation	19.2%	5
Other	3.8%	1

Other Responses:

- are prepared for all the above depending on the magnitude of the fire and or emergency

11. Are correctional facility staff trained to utilize Self Contained Breathing Apparatus (SCBA) to assist with detainee removal during hazardous smoke conditions?

Yes	46.2%	12
No	26.9%	7

Unknown	26.9%	7

12. Does your department provide SCBA training to the correctional staff?

Yes	14.8%	4
No, correctional staff do not use SCBA	25.9%	7
No, correctional staff perform self training	29.6%	8
Unknown if correctional staff utilize SCBA	29.6%	8

13. How often does your department provide/assist correctional facility staff members with training on the use of SCBA

Semi-Annually	7.7%	2
Annually	3.8%	1
N/A	80.8%	21
Other	7.7%	2

Other Responses:

- 3 of them are on our dept.
- Offered - yes, actual training, no

14. How often does your department members receive training on correctional facility evacuation plans?

Semi-Annually	14.8%	4
Annually	22.2%	6
N/A	44.4%	12

Other	18.5%	5

Other Responses:

- To be determined
- As part of in-house training per the Captain's discretion
- None
- We participate in drills on a regular basis
- rarely

15. How often does your department participate in correctional facility full-scale evacuation drills?

Semi-Annually	0.0%	0
Annually	11.1%	3
N/A	66.7%	18
Other	22.2%	6

Other Responses:

- We have not participated.
- have done them in past, recently 4 months ago
- never participate in a full-scale evacuation
- There is no evacuation drills at the facility. They only cover the procedures with staff
- Fire Dept. Inspection staff only: annually
- Whenever requested. They perform drills on a cycle.
- upon request of the Sheriff - rare

16. How long does it take to perform a full evacuation of the correctional facility?

Less than 5 minutes	7.4%	2
5 - 10 minutes	14.8%	4
More than 10 minutes	3.7%	1
Time has not been documented	22.2%	6
Fire Department does not participate in evacuation drills	44.4%	12
Other	7.4%	2

Other Responses:

- Have not done full evacuation
- Do not time full evacuation. Time only removal to a separate fire rated/smoke protected area. Less than 5 mins.

17. What alternative locations for housing detainees in the event of a long-term evacuation have been identified?

Another correctional facility	33.3%	9
Public Building	7.4%	2
Private commercial building	0.0%	0
No alternative has been identified	14.8%	4
Unknown	40.7%	11
Other	3.7%	4

Other Responses:

- The County Jail has a large garage across from the sallyport on the facility, detainees are moved to that location, across the alley.

18. During an evacuation due to fire, where are detainees secured in relation to responding emergency personnel?

In a secure outside area	48.0%	12
In a secure secondary facility	12.0%	3
Common outside area with additional law enforcement called to assist	32.0%	8
Common outside area with no additional law called to assist	0.0%	0
Other	8.0%	2

Other Responses:

- detained in cells
- Special inside areas

19. During an evacuation emergency, how are detainees assisted from the facility?

Correctional staff only	73.1%	19
Correctional staff and FD personnel	23.1%	6
FD personnel only	0.0%	0
Other	3.8%	1

Other Responses:

- Correctional staff and Deputies

20. What evacuation hazards or potential hazards to detainees during fire events have been identified by your department? (Please check all that apply)

Delayed evacuation due to inadequate correctional	47.8%	11

facility staffing		
Delayed evacuation due to facility design/layout	17.4%	4
Delayed evacuation due to security systems	34.8%	8
Delayed evacuation due to insufficient correctional staff familiarity with evacuation procedures	21.7%	5
Delayed evacuation due to insufficient emergency responder familiarity with facility	17.4%	4
Delayed evacuation due insufficient emergency responder staffing on initial arrival at the incident	26.1%	6
Insufficient training on equipment used by correctional staff during evacuation (e.g. SCBA)	8.7%	2
Other	17.4%	4

Other Responses:

- None (response repeated twice)
- unknown
- Delayed evac by correctional staff, waiting on fire personnel to they them they need to evacuate

21. What evacuation hazards or potential hazards to correctional facility staff during fire emergency evacuations have been identified by your staff? (Please check all that apply)

Delayed evacuation due to inadequate correctional facility staffing	47.6%	10
Delayed evacuation due to facility design/layout	23.8%	5
Delayed evacuation due to security systems	28.6%	6
Delayed evacuation due to insufficient correctional staff familiarity with evacuation procedures	9.5%	2

Delayed evacuation due to insufficient emergency responder familiarity with facility	23.8%	5
Delayed evacuation due insufficient emergency responder staffing on initial arrival at the incident	23.8%	5
Potential exposure to hazardous smoke due to inadequate equipment training for correctional staff (e.g. SCBA)	28.6%	6
Increased potential for assault from detainee during evacuation	19.0%	4
Other	19.0%	5

Other Responses:

- none (response repeated twice)
- N/A
- Exposure to hazardous conditions during attempted evacuation of detainees rather than seeking personal evacuation

22. What evacuation hazards or potential hazards to emergency responders during fire events have been identified by your staff? (Please check all that apply)

Potential for responder entrapment due to unfamiliarity with facility security system	32.0%	8
Potential for responder entrapment due to unfamiliarity with facility layout/design	56.0%	14
Increased potential for assault from detainees	48.0%	12
Other	12.0%	3

Other Responses:

- none

- This is a very small facility, doors do not automatically lock on closure, so entrapment due to this is not an issue
- N/A
- Getting locked in an evacuated area

23. What entities are included during your emergency response plan training for the correctional facility? (Please check all that apply)

Local FD/EMS	88.5%	23
Emergency Management Agency	34.6%	9
Hazmat Team	19.2%	5
Local PD	61.5%	16
Mutual aid FD and/or PD	50.0%	13
N/A	11.5%	3
Other	3.8%	1

Other Responses:

- SO Road Officers

24. Please use the space below for any further information you would like to provide regarding emergency evacuation events at correctional facilities.

- Though we are responders to our correctional facility your survey did not distinguish between fire and EMS response which affected the answer to some questions.