TO STAY OR TO GO? A CRITICAL EVALUATION OF

CARCERAL OPERATIONS IN SLOW-ONSET

DISASTERS

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Abstract: As the frequency and scale of slow-onset hazards grow, carceral administrators must decide how best to protect their vulnerable population, inmates. Often, administrators are faced with two choices, shelter in place or evacuate. When the wrong decision is made, the consequences can be dire in terms of human suffering and/or unnecessary expense. Little is known about how these decisions are made, what collaboration is done, or the subsequent conduct of disaster operations. This study seeks to learn more about jail and prison disaster operations by conducting a critical evaluation of carceral facility preparedness for and response to routine, slow-onset disasters. This aim - and resultant study - is consistent with a pragmatic worldview where the focus is on solving problems and determining what works. Six research questions were developed as a guide for the study. To answer these, an inductive design informed 41 semi-structured interviews of carceral administrators and emergency managers who had experienced a slow-onset disaster during 2020-2021. These professionals came from the same jurisdictions and were sampled from three regions of the US where slow-onset disasters are common, namely the Gulf Coast, the Southwest, and the Pacific Northwest. Upon request, interviewees shared planning documents, disaster guides, and after action reviews which were subjected to document analysis. Audio files of recorded interviews were auto-transcribed using Otter.ai then reviewed for accuracy. Atlas.ti software was used to organize, code, compare, and analyze transcripts and documents. Thirteen categories and four overarching themes emerged, namely (1) Carceral facilities not seen as an EM concern, (2) Parallel but not synchronous collaboration, (3) Interoperability, and (4) Successful end-state which inform 31 posited recommendations for enhancing carceral disaster preparedness. These findings, which represent the study's theoretical and practical contributions, advance a framework to enhance the efficacy of carceral disaster operations and reduce inmate vulnerability during future slow-onset disasters.

Key words: prison evacuation, emergency management, vulnerable populations, inmates.

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CHAPTER I

INTRODUCTION

Administrators of carceral facilities have an onerous decision to make when given advanced

warning of either natural or human induced disaster. Should they attempt to evacuate the inmate

population (go) or should they shelter in place (stay)? There are numerous good reasons for both.

On the one hand, researchers have documented the inhumane and unnecessary suffering caused

when systems and supplies fail leaving inmates to wait out the most severe storms in their cells

under terrible conditions (Balaban & Jawetz, 2006; Dement & McAleavy, 2021; Gaillard &

Navizet, 2012; Savilonis, 2013; Vumback, 2019). On the other hand, inmate evacuations are

costly, logistically challenging, and fraught with safety issues for guards, inmates, and the public,

especially in the midst of a pandemic (Arango & Burroughs, 2020; Bajardi et al., 2011; Glick et

al., 2013; Holguín-Veras et al., 2012; Kigerl & Hamilton, 2015). Further complicating inmate

evacuation is the heterogeneous nature of this group. For example, some inmates suffer from

mental illness or special medical conditions, some are high security risks, and still others are in

protective custody for their own safety.

The dilemma of carceral administrators is a companion to one faced by politicians during

disasters (Prater & Lindell, 2000). Should they evacuate the civilian population risking social

disruption and expense, or shelter in place risking life, votes, and media scrutiny? A clear

example of this political conundrum can be seen in the case of hurricanes. An accurate judgement

about hurricane direction, scale, and speed is difficult to forecast for even the most experienced scientists (Lindell & Prater, 2006). Governor Kathleen Blanco and Mayor Ray Nagin experienced this demon firsthand during Hurricane Katrina in 2005. Both were castigated for delaying the order to evacuate New Orleans (Waugh, 2006). As if the ignominy of the Katrina case were not enough to distress later decision makers, Houston Mayor Sylvester Turner received both accolades and criticism when he decided not to order a mandatory evacuation for Hurricane Harvey in 2017 (Fernandez & Fausset, 2017).

The regularity and frequency of slow-onset disasters in various regions of the US make them predictable. Indeed, the hurricane, winter storm, and wildfire seasons across the nation are well known. Because these disaster seasons are so predictable, it follows that all entities in the hazard zones should be continually planning and preparing for impact. Carceral facilities are no exception. While the planning documents and operations of EM organizations are generally publicly available, those of carceral facilities, if they exist at all, are not.

A brief description of correctional federalism and the different carceral levels follows. Like government, carceral facilities exist at a federal, state, and local level. Local facilities include county or city jails and can vary greatly in size. Persons within both the federal, state, and local systems are spread across the adjudication spectrum. For example, at the federal level the Metropolitan Detention Centers throughout the United States (US) are designed to hold persons not yet arraigned, were denied bail, or are awaiting trial (Dement & McAleavy, 2021). These persons have not been found guilty by the criminal justice system and so retain full citizen rights. Federal and state prisons house inmates post-conviction and typically for more than one year. County level facilities often house both convicted and un-adjudicated persons at the same time but typically for less than a year. However, when state facilities are overcrowded, states can and do pay county facilities to house inmates.

Jails and Prisons (hereafter referred to collectively as carceral facilities) are generally free to decide if they should evacuate or shelter in place when faced with the approach of a slow-onset disaster. This is true even in cases where mandatory evacuation orders have been issued for the general public (Dement & McAleavy, 2021). Historically, carceral facilities opt to shelter in place and wait out disasters. Unfortunately this can be detrimental to the wellbeing of inmates and in violation of their Eighth Amendment rights (Savilonis, 2013; Vumback, 2019). When carceral facilities do decide to shelter in place, their preparations are frequently inadequate (Balaban & Jawetz, 2006; Dement & McAleavy, 2021).

Hurricanes have so far been used as the primary disaster example, but the same evacuation or shelter in place decisions apply to wildfires. The recent infernos in Sonoma County, CA, Boulder County, CO, and in swaths of Oregon, have become case studies in population evacuation, including carceral facilities (Arango & Burroughs, 2020; Bradbury, 2020; Brennan & Healy, 2020; Burgess, 2020). Although track forecasts and controls for wildfires are different than hurricanes, the advanced warnings and carceral evacuation decisions for those in its path are not. However, unlike hurricanes, wildfires introduce an air quality concern to inmate health. The flames are unlikely to reach the walls of a carceral facility because of the broad open spaces typical of facility design, but the drifting smoke can move far beyond fire borders penetrating the HVAC system and building interior (Arango & Burroughs, 2020). As a result, carceral administrators must monitor not only the proximity and path of flames, but also wind induced changes in smoke patterns when trying to gauge the threat level.

The 2020 COVID-19 pandemic has exacerbated the impact of disasters on carceral facilities. Even as a standalone hazard, the challenges of natural and human induced disasters are difficult for administrators. When the complications of a global pandemic are introduced, the obstacles to inmate health and safety can seem insurmountable. An example is the forced evacuation in September 2020 of the Coffee Creek Correctional Facility in Oregon which was in the path of

wildfires (Wilson, 2020). A total of 1685 female and 432 male inmates were evacuated to the

Deer Ridge Correctional Institution via buses in the middle of the night (Arango & Burroughs,

2020; PrisonPro, 2021; Wilson, 2020). One inmate, Kristina Boswell, who spoke with the press

through her attorney, told of being herded onto a bus and moved to another already crowded state

facility with little water and no chance of social distancing (Arango & Burroughs, 2020). When

inmates arrived at Deer Ridge, the lack of space required sleeping close together on pads laid on

the floor. Although this would not be atypical in a disaster response pre-COVID-19 (think

Katrina and the Super Dome) the health hazard of many people sleeping in close proximity

during a pandemic is self-evident now.

The US Centers for Disease Control and Prevention (CDC) has published COVID-19 guidance

for carceral administrators (CDC, 2020). Following these guidelines becomes exponentially more

difficult when inmates from evacuated institutions are required to reside in facilities that are

already full. For example, the CDC recommends preventing individuals with confirmed or

suspected COVID-19 from being transferred between jurisdictions. The CDC also recommends a

review of existing disaster plans and revising them for COVID-19. However, the existence of

carceral disaster plans is piecemeal and they may not be followed even if they do exist (Dement

& McAleavy, 2021). Furthermore, in the Coffee Creek example the transportation logistics

needed for a hasty evacuation of large numbers of inmates required overloading buses thereby

further perpetuating the spread of the virus (Arango & Burroughs, 2020).

Disasters of all types cause greater harm to those who are least able to prepare for and recover

from their effects (Mileti, 1999). Those most vulnerable to the harms of slow onset disasters are

also those least able to facilitate an evacuation or mount an effective shelter in place when

necessary (Bascetta, 2006; Cutter et al., 2003). Risk exposure and the inability of special

populations to mitigate or prepare for known hazards is a key feature of the vulnerability

literature (Comfort et al., 1999; Cutter, 2003; Cutter et al., 2003; Finch et al., 2010; Fothergill &

Peek, 2004; Fussell, 2015). These studies identified poverty, race, age, immobility, and gender as characteristics of the socially vulnerable. Yet inmates, who as a group match the above-mentioned vulnerability characteristics, are frequently ignored in the disaster vulnerability discourse (Gaillard & Navizet, 2012; Purdum & Meyer, 2020).

By any definition, inmates are readily identifiable as vulnerable persons as they are unable to take even the most basic preparedness and response steps for their own safety (Dement & McAleavy, 2021). Although this level of vulnerability is staggering, inmates are seldom mentioned in the vulnerability literature and, perhaps more importantly, are rarely considered by emergency planners (Hoffman, 2008; Omorogieva, 2018; Savilonis, 2013). Carceral facilities house inmates who are typically ignored in all phases of disaster management (Purdum & Meyer, 2020). However, civil society has a clear duty to protect this group despite their crimes; inmates need to be protected as much as any other vulnerable population ("Estelle v. Gamble," 1976; "Farmer v. Brennan," 1994; Vumback, 2019).

Inmates are members of society who are deprived of their liberty whilst serving time in a prison or a jail (US Bureau of Prisons, 2020b [BOP]). They lack freedom of movement as most aspects of their daily lives are controlled and directed by the jurisdiction to which they are remanded. This ensures they are among the most vulnerable of populations. Consequently, the Supreme Court of the United States (SCOTUS) has ruled that carceral administrators have a responsibility to care for their health and safety (see Estelle v. Gamble, 1976 and Farmer v. Brennan, 1994). This is especially so during times of disaster. Historically, correctional facility disaster preparedness initiatives have been inadequate and require significant improvement to fulfill this important, but sometimes overlooked, duty of care (Dement & McAleavy, 2021).

Inmates are a significant percentage of the US population. Recent estimates of total inmate population at all jurisdictional levels have reached about 2.3 million persons (Sawyer & Wagner,

2020). The US has the highest per capita incarceration rate and highest total numbers of incarcerations in the world (Walmsley, 2013). These millions of people are affected by the decisions of carceral administrators who are faced with disasters. Although recent criminal justice reform codified in the First Step Act of 2018 has attempted to lower the inmate population through targeted recidivism reduction programs (BOP, 2020), the US will lead the world in total prison population for years to come.

It is important to recognize that the disaster decisions made by carceral administrators impact not just inmates, but their families as well (Cecil et al., 2008; Pierce, 2015). Inmates are typically cut off from communication with family before, during, and after a disaster (Dement & McAleavy, 2021). Familial concern for the wellbeing of their incarcerated loved ones is natural and expected, even more so during times of crisis. In the chaos and aftermath of a sudden evacuation, families can be left with no knowledge of their loved one's whereabouts or a means of communicating with them for some time. Frequent communication and contact with families is a critical factor in both offender behavior and the quality of life for their families (Carlson & Cervera, 1991). Even when the decision is made to shelter in place, infrastructure disruptions can prevent communication with those on the inside because of power loss, telecom outages, or other critical services further exacerbating the hardships on familial relationships. It is therefore incumbent on emergency planners and carceral administrators to prepare for the effects of disasters on not only the inmate population but their families as well (Dement & McAleavy, 2021).

Multiple slow-onset, or notice, disasters in 2020 and 2021 provided the primary investigator (PI) an opportunity to study the response of county jails and state prisons. These disasters included Hurricanes Laura and Delta, wildfires in the Northeast and Western US, and a hazardous material leak in the Southeastern US. Members of the emergency management (EM) and carceral communities were involved in these disasters which allowed their interactions to be studied.

The onset of Hurricane Laura, hereafter referred to as Laura, on the southwestern coast of Louisiana between August 20th and 29th of 2020, provides an opportunity to study the response behavior of parish jails in the impact area. The Calcasieu Parish Sheriff's Office (CPSO) successfully evacuated 1176 inmates from the Calcasieu Correctional Center (CCC) in preparation for the impact of Laura (KPLC, 2015; Manning, 2020) while the Beauregard parish jail evacuated 283.

Wildfires in late 2020 raging in the Pacific Northwest prompted carceral evacuations of multiple facilities with a total inmate evacuation count in the thousands. This occurred despite heavy smoke conditions and the COVID-19 pandemic. What those administrators had to do and how they did it revealed some interesting findings.

A wastewater reservoir leak in Florida during the early months of 2021 prompted an evacuation of both the general population and county jail inmates who were downstream. This manmade disaster added a unique perspective to risk assessment, training, and inter-jurisdictional collaboration. The entrance of the Environmental Protection Agency into the situation introduced new variables in the carceral response to this slow-onset disaster and modified the idea of what it means to have a successful jail evacuation.

To be clear, the phrase "successful evacuation" is vague and its usage by carceral professionals is fleshed out within this study. The movement of inmates from impacted facilities to a host somewhere outside the hazard zone involved multiple steps which are identified in this research. At the outset of this study, success was defined as access to water, food, shelter, basic medical care, safety, and adequate sanitation. This is based on the bottom two levels – physiological and safety - of the Hierarchy of Needs famously theorized by Maslow (1943).

According to a CPSO deputy jail commander who was interviewed for this study, an example of carceral success was evacuating the jail just 12 hours before Laura made landfall. This short

evacuation timeframe was because Laura's course changed suddenly and hooked north bringing the parish into the center of her path. In that time the CPSO mustered the resources, manpower, and collaborative effort needed to disperse its inmates across the state to other carceral facilities. This happened while maintaining its LE duties and assisting with the evacuation of the parish's non-incarcerated citizens.

The evacuation of the Calcasieu Parish jail prevented unnecessary suffering or loss of life for both inmates and staff. The physical damage done to the region was considerable, and had the jail not evacuated there could have been unnecessary inmate suffering, serious injury, or even death. Dement and McAleavy (2021) noted that evacuation has not been the typical response for jails faced with disasters. Moreover, little is known about how the CPSO effected the evacuation.

There is a certification course titled Jail Evacuation Training that is offered by the National Sheriff's Association (NSA) and funded by the Department of Homeland Security (DHS). Although the title would appear to address disaster needs, the course is primarily oriented to evacuation following an act of terrorism (National Sheriffs Association, 2020). This does not address the need for a preemptive evacuation because of a looming hazard. It is unclear to what extent the CPSO and other carceral facilities across the US utilize this course, or others like it, to develop plans for and execute their own evacuations. Also unclear is the extent to which pre-onset aid agreements and partnerships may have contributed to inmate evacuation success.

At the time of this writing, the inmates of Calcasieu Parish have yet to return home. Interviews by the PI and journalists with members of the Sheriff's office revealed it is not certain when they will (Schmidt, 2020). This is because of the damage done to the jails where inmates are quartered. There are two in the parish. Although the existence of two county jails mere blocks from each other is a mystery to outsiders, this study uncovered the reason and found it one of the key variables for this parish's carceral evacuation success. An additional complication to the parish's

recovery from Laura was the arrival of Hurricane Delta, hereafter referred to as Delta, just two months later during the first week of October 2020.

There is a gap in the literature addressing how carceral facilities prepare for, respond to, and recover from disaster. Other than the post-disaster stories which have emerged from media accounts and inmate lawsuits (see Robbins, 2008 for examples from Hurricane Katrina), the disaster operations of these institutions are unknown. Indeed, the criminal justice world, carceral facilities included, has been criticized for this very lack of transparency (Chanin & Espinosa, 2015; Geraghty & Velez, 2011).

Aim and Objectives

This study aims to:

Critically evaluate carceral facilities preparedness for and response to routine, slow-onset disasters.

This aim has four supporting objectives:

1. Identify current stakeholders and strategies engaged in carceral facilities slow-onset disasters preparedness and response.

2. Identify slow onset disaster preparedness and response strategies that have yielded positive outcomes for carceral facilities.

3. Assess the extent to which carceral administrators collaborate with local EM professionals within preparedness and response.

4. Formulate recommendations to improve carceral facility preparedness for and response to slow-onset disasters.

CHAPTER II

REVIEW OF LITERATURE

Inmate Social Vulnerability

The goal of Social Vulnerability theory is an explanation of why some populations are less

resilient in the face of both natural and human induced hazards (Blaikie et al., 1994). There are

sub-groups in all societies without a political voice because of one or more characteristics. These

groups are more vulnerable to disasters because collectively they lack both the means and

political power to protect themselves (Comfort et al., 1999; Fothergill & Peek, 2004).

Schneider and Ingram (1993) created a four-part social construction typology of target

populations based on power level and public opinion. They labeled these groups Advantaged,

Contenders, Dependents, and Deviants (Figure 1).

Social constructions and political power: Types of Target Populations

Constructions

		Positive	Negative
Power	**Strong**	**Advantaged** The elderly Business Veterans Scientists	**Contenders** The rich Big unions Minorities Cultural elites Moral majority
	Weak	**Dependents** Children Mothers The disabled	**Deviants** Criminals Drug addicts Communists Flag burners Gangs

Figure 1: Schneider & Ingram (1993) p. 336

It may be argued that these socially constructed stereotypes of the target populations, both positive and negative, influence public officials thereby shaping policy design and agenda. Of these four, inmates are clearly within the Deviants group because of their weak political power (many are prohibited by law from voting) and negative social stereotype. Indeed, Schneider and Ingram (1993) pointed out not only a Deviant group's powerlessness but also the tendency of public officials to inflict punishment on this group. Punishment for groups seen as deviants, like inmates, are approved by the public so officials place burdens on them with little fear of retaliation. The political slogans "get tough on crime" or "law and order" are examples of this dynamic. However, a governmental duty to protect these less resilient populations exists because of this very vulnerability (Cope et al., 2016). This duty is incumbent on all levels of government, not just the local jurisdiction where these peoples are found.

From an emergency management (EM) perspective, those most at risk from the hazards of natural or human induced disasters are considered the most vulnerable. Persons identified as being less

resilient include minorities, women, the poor, the immobile, and transient residents (Morrow, 1999; Whytlaw, 2020). Their lessened ability to cope with the harms brought about by hazards is the hallmark of vulnerable populations. Notably, this description of vulnerable groups matches the demographics of incarcerated persons remarkably well (US Bureau of Prisons, 2018). Whether it be race, education level, or wealth, inmates generally fall into more than one of the categories which define a vulnerable populations (Gaillard & Navizet, 2012).

Exacerbating their inherent vulnerability, inmates at all stages of adjudication have had their liberty and decision-making capabilities curtailed. An inmate's ability to prepare for and respond to either warnings or imminent hazard onset is severely diminished, if not totally negated. As a result, they are subordinate to the preparation and response decisions of political authorities, emergency managers, and carceral administrators who are entrusted with their safety and wellbeing. Without the freedom to act on warnings or social cues, they are much less able to cope with disaster and are therefore more vulnerable arguably more than those non-incarcerated persons who have historically been considered vulnerable (Cannon, 1994; Ferris et al., 2016). Indeed, many inmates are often even unaware of the full extent or timeline of oncoming disasters because communication mediums are more restricted by carceral administrators before and during disasters (Dement & McAleavy, 2021).

Populations who find themselves in the path of an oncoming disaster, be it hurricane, lava flow, or wildfire, often use evacuation as way to mitigate the risk to life and limb. Slow onset disasters like these provide the opportunity to issue warnings and make protective action decisions (Lindell & Prater, 2006; Whytlaw, 2020). If evacuation orders are given by the local political authority, or even in cases where it is recommended but not ordered, people in the hazard zone can make an exit.

Certain populations do not have the ability to evacuate which makes them more vulnerable. The Government Accountability Office (GAO) has identified these persons as those who are transportation disadvantaged, in a hospital, or are residents in a long term care facility (Bascetta, 2006). More specifically, the GAO named the transportation disadvantaged as "the elderly, persons with disabilities, and people who, by choice or circumstances, do not own or have access to a personal vehicle" (Bascetta, 2006, p. 3). Although not specifically named in this definition, inmates do not have access to a personal vehicle because of their circumstances which therefore makes them transportation disadvantaged. In its post-Katrina report, the GAO stressed the duty of all levels of government to plan for and properly execute an evacuation (Bascetta, 2006). While it was referring to hurricanes, the GAO's mandate to help the vulnerable applies to all slow onset disasters where a path can be predicted and warnings given. Recent examples include not only the 2020 West Coast wildfires but also the evacuations from Hawaii's Big Island volcanic lava flows in 2018 (Rosa, 2018). In its congressional report, the GAO also pointed out the lack of preparation on the part of nursing homes – another transportation disadvantaged group. Whytlaw (2020) found nursing homes in New Jersey still have varying levels of preparedness and coordination even in the decade since Katrina. This is a salient point given local, state, and federal incarceration facilities house a similar vulnerable population. Perhaps unintentionally, the GAO's omission of carceral facilities in its report underscores both the marginalization of inmates by society and the invisibility of carceral facilities on the EM radar.

Unlike earthquakes, tsunamis, and human induced disasters, hurricanes and wildfires in the US occur within generally predictable regions and seasons every year. While no two disasters are alike (Quarantelli & Dynes, 1977), there are enough similarities between them that planning and preparation can be done. It is widely known that the Atlantic hurricane season runs from June 1st to November 30th and includes the Gulf of Mexico and Caribbean Sea while the Eastern Pacific season runs from May 15th to November 30th (National Hurricane Center, 2020). Less well known

is that the US wildfire season is generally considered to be seven months long covering late

spring through early fall with a peak in August and affecting primarily the states of California,

Georgia, Texas, North Carolina, Florida, Arizona, and Oklahoma (National Interagency Fire

Center, 2020). Given this level of predictability, it is reasonable for EM planners and carceral

administrators within these regions to anticipate and prepare for hazard onset rather than simply

react. Resilience is an important variable in disaster recovery (Aldrich & Meyer, 2014; Boin et

al., 2010; Wildavsky, 1988); however, avoiding the disaster altogether by evacuation or

mitigating it through appropriate preparations beforehand is more desirable when a clear path to

do so exists (Dement & McAleavy, 2021).

Emergency management professionals at all levels of government must include carceral facilities

in their planning to mitigate and prepare for disaster onset. All too often, the EM hat is worn by

those with little to no specialized EM training (Chang & Neal, 2019; McEntire, 2018). As a

result, those assigned disaster roles may be unfamiliar with the tools of the trade used to "prepare

plans and procedures for responding to natural disasters and other emergencies" (Bureau of Labor

Statistics, 2020).

One of the most powerful planning tools available is vulnerability mapping. This technique uses

census data to create a social vulnerability index (SoVI) based on the aforementioned variables

(Cutter et al., 2003; Flanagan et al., 2011). Disaster professionals can combine this with hazard

data like HAZUS using GIS software to create a map which identifies where the most vulnerable

are (Burby et al., 2000). Additionally, critical infrastructure sites, first responder locations,

hospitals, supply distribution points, and many other variables can be added. Often left off this

map, however, are carceral facilities even though they contain one of the largest concentrations of

the most vulnerable (Gaillard & Navizet, 2012).

When EM professionals, or those who simply wear the hat, do not include carceral administrators in planning and exercises, the relationships, disaster roles, and aid agreements needed before disaster onset are less robust (Kreps & Bosworth, 2007; Robinson & Gerber, 2007; Zawila-Niedzwiecki, 2010). Without adequate planning and exercising, carceral administrators are left on their own during disaster potentially exposing vulnerable inmates to horrendous conditions (Dement & McAleavy, 2021).

The NIC created a disaster planning guide intended for carceral administrators but is also available to others (Schwartz & Barry, 2005). Shortly before Hurricane Katrina, the NIC, a component of the Federal Bureau of Prisons (BOP), published its guide for preparing for and responding to prison emergencies (Schwartz & Barry, 2005). This guide has, however, not been updated in the almost 15 years since its publication. Savilonis (2013) noted that although it has existed for some time, the NIC guide is not broadly known and rarely used, even by those aware of its existence. Limited use of this disaster planning guide has resulted in harm to vulnerable inmates in multiple disasters since its inception (Dement & McAleavy, 2021). Accordingly, this study will determine the extent to which carceral administrators are aware of and use the NIC guide, and other relevant documents.

The Eighth Amendment and Carceral Duties

The US Constitution's Eighth Amendment protects its citizens from cruel and unusual punishment. At its inception this simply referred to types of sentences like branding or the stockade but has since been expanded to included much more. In 1976 the SCOTUS included maintaining basic humane living conditions within carceral facilities as a duty incumbent on those charged with the care of inmates ("Estelle v. Gamble," 1976). The SCOTUS expanded the Eighth Amendment's application in Farmer v. Brennan (1994). In this case the court ruled that

"deliberate indifference" to the safety of inmates was a violation of the prohibition against cruel and unusual punishment establishing further a clear duty of care.

At times, post-disaster living conditions in carceral facilities have fallen short of Eighth Amendment mandates (Dement & McAleavy, 2021; Omorogieva, 2018; Robbins, 2008; Vumback, 2019). Legal scholars have recently, and clearly, established the chain of logical reasoning linking the Eighth Amendment to inmate safety both during and after disaster (Omorogieva, 2018; Vumback, 2019). Given this understanding of the constitutionally mandated duty of carceral administrators to care for inmates, the importance of making timely decisions and disaster preparations is clear. Whether this be an evacuation or shelter-in-place, steps can, and should, be taken to reduce human suffering caused when disaster strikes a carceral facility.

Although much improvement can be made in the way all levels of the US correctional system go about ensuring disaster preparations of carceral facilities (see recommendations made by Dement & McAleavy, 2021), there are jurisdictions that have seemingly been successful in avoiding a dereliction of their duty. One of the most recent of these is the CPSO. As noted, the CPSO evacuated its nearly 1200 inmates before the onset of Laura. An evacuation of this size could not be undertaken by the CPSO on its own, but it is presently unknown who else, and what outside resources, were involved in making this happen.

Carceral Collaborative Management

Any examination of hazard events reveals a clear need for collaboration (Olszewski & Siebeneck, 2021). The disruption of normal operations accompanying disaster impact, whether sudden or prolonged, requires people and organizations to work together to reestablish social order (Cutter et al., 2010). The intrusiveness, or scale, of the disaster event helps determine what resources will be needed and what organizations will have to work together to restore routine daily activities

(Abramson et al., 2010; Weiss, 2007). This is also true for carceral facilities. Some disasters can be independently weathered by initiating a lockdown – confining inmates to their cells – if adequate preparations have been made. Others require organizational collaboration for pre-onset transfers, evacuation after impact, or sustaining a long shelter in place strategy.

In western democracies citizens have come to expect government and non-government organizations (NGO) to work together in order to mitigate, prepare for, respond, and recover from hazard events (Aldrich & Meyer, 2014). This collaboration of government in disaster is expected to help more than it harms. In order to do this, governments rely on indigenous and exogenous resources. Some of these resources are organizations which exist pre-impact for the specific purpose of preparing for and dealing with disaster. Volunteer organizations assisting in disaster (VOAD) like the Red Cross and Feed the Children are good examples of resources exogenous to government. Other organizations become involved in the disaster only after a hazard is either imminent or has impacted, and new organizations may emerge post disaster (Dynes, 1970).

In their recent work, Dement and McAleavy (2021) make several recommendations for the improvement of government collaboration surrounding the safeguarding of inmates during disaster. This includes effectively integrating local carceral administrators in EM exercises and using disaster grant funding at the federal and state levels to leverage compliance with more rigorous mitigation and preparation. Some carceral organizations do seem to do a better job than others. As noted, several examples exist of carceral facilities orchestrating successful evacuations operations. However, these successes are sporadic rather than consistent. Furthermore, little is known about what, if any, collaboration made these operations a success or even what the benchmark of success should be. Thus, research in this critical area is presently lacking.

While some democracies use a centralized approached to hazard events, federalism in the United States uses a decentralized collaborative model. James Madison famously outlined in Federalist

#51 his vision for collaboration in public management through the separation of powers. This illustrates just how fundamental collaborative public management is to the US political system and by extension its disaster paradigm. The division of authority between levels or branches of government, while cumbersome at times, serves both as a check on centralized power and a method for more localized government. Power distribution away from central government has forced the collaboration of local, state, tribal, and federal powers to "avoid the tyranny of the majority" (Bingham & O'Leary, 2011, p. S80).

An examination of state and county disaster readiness has shown considerable variability in the collaborative planning and response process brought about by the US federalist system (McConnell & Drennan, 2006). Indeed, McConnell and Drennan (2006) point out that even when attempts are made to proactively collaborate in disaster planning, it can at times yield only a symbolic readiness which does not reflect operational realities. Knowing this, carceral administrators must be diligent in pursuing inclusivity from their jurisdictional partners, especially those who must face disaster on a predictable timetable.

In the US, lower levels of government are required to formally request aid when they are no longer able to deal with a hazard event on their own. Because of this, municipal, county, state, tribal, and federal agencies can all become involved depending on the scale of the disaster. A formal request for federal aid in disaster generally must meet established thresholds and is not given for free. There is a shared cost plan outlined in the Stafford Act (42 U.S.C. §5121).

The answers to questions of cost and who pays is less clear when an evacuation is needed for inmates. Certainly there are additional costs above normal operating expenses generated by transportation requirements, in-house labor hours and, if needed, external labor hours (Lanham, 2003). For state and federal correctional facilities, inmates have been moved to other institutions within the broader network of prisons overseen by one governing body (Chrastil, 2018). When

state or federal prisons need to evacuate, the burden of cost is shouldered by the state BOP or Federal BOP respectively and monies are moved between accounts without ever leaving organizational coffers. For example, after Hurricane Maria made landfall in Puerto Rico on September 20th 2017, inmates at the Metropolitan Detention Center - Guaynabo were moved to another federal facility in the southeastern US (Dement & McAleavy, 2021). In contrast, county jails are self-governing and only loosely connected to other carceral facilities. As a result, when county facilities need to move their often-large populations (the CCC housed around 1200) funds must move from county accounts to wherever inmates are found a bed. For example, a large inmate population like that of the CCC may be spread between multiple carceral facilities across a state or region. Indemnification can be negotiated in advance by government attorneys and documented in mutual aid agreements, especially for jails located in zones where regular hazards like hurricanes or wildfires make evacuations more likely. Like housing of state prisoners in local jails, a per diem amount is set for each evacuated inmate but not known for certain. Little scholarly work addresses the specific topic of how funds are transferred for inmate housing during a disaster evacuation (Baker, 2000; Cohen, 2005).

The National Response Framework (NRF) provides a guide for disaster collaboration in the form of the National Incident Management System (NIMS). NIMS is a framework for collaboration. However, as is often the case, this is more difficult to implement than it is to plan for. For example, Waugh and Straib (2006) found many collaborative difficulties present in emergency management when government entities, especially at the federal level, try to work together. Indeed, the difficulties can be so daunting that McGuire (2006) suggested agencies avoid collaboration altogether unless there is a real advantage to be gained. His primary reason for suggesting solo agency operations was the low level of trust existing between agencies before a disaster. For this reason, McGuire recommended the fostering of trust building events between agencies prior to hazard impact. Dement and McAleavy (2021) also recommended trust events

specifically between carceral facilities and EM organizations because of the historical lack of partnership.

Within NIMS, the National Response Framework includes the establishment of an Incident Command System (ICS). The ICS is intended to be a centralized decision making body of collaborative organizations responding to a disaster close to its epicenter (FEMA, 2020). As noted by Chang (2017), the flexible nature of the ICS allows for a scalable organizational structure that can incorporate both formal and informal disaster organizations including volunteers. It is unclear from existing literature what, if any, carceral representation has existed in the ICS in years gone by, or even recently for Laura and the West Coast wildfires. While LE entities like a Sheriff's office are certainly represented in the ICS for their traditional order maintenance role, the interests of the county jail and its inmates may not be as well represented. It is unknown to what extent state or federal carceral administrators are active in a disaster impacting their institution, but this study intends to shed some light on this. In their study on inmate labor during disaster, Purdum and Meyer (2020) point out that inmates in some locales have been consistently used to fight wildfires. Because they work in conjunction with regular fire units, their activities are coordinated by the ICS and sometimes laid out in state emergency operations plans (EOP). Purdum and Meyer's research helps to identify which states include inmate labor in their EOP but does not detail how inmate labor is coordinated within the ICS or who acts as the inmate labor representative there.

The primary onus of coordinating disaster exercises between entities rests squarely on the shoulders of EM professionals (Chang & Neal, 2019). However, this does not relieve carceral administrators of the duty to reach out when there is an identified preparedness gap, especially for those in regions of predictable risk. As noted, it is unclear what collaboration, if any, has been occurring pre-disaster between these two. From an emergency management point of view, Kiefer

and Montjoy (2006) noted in their study of the general evacuation of New Orleans for Katrina that agency collaboration required working together before a disaster. However, as noted by Dement and McAleavy (2021), the general evacuation for Katrina was ignored by local Sheriff Marlin Gusman when it came to the Orleans Parish Prison (OPP). It would seem then that there was limited to no collaboration or consultation between this element of LE and the EM professionals in the parish.

Drawing on the work of Berlin and Carlström (2011) who studied on-scene relationships between fire, police, and ambulance services in Sweden, it seems likely that collaboration between EM and carceral administrators is parallel rather than synchronous. These scholars defined parallel collaboration as organizations who "carry out tasks simultaneously, while acting on their own" (p.162). This is in contrast to synchronous collaboration when "tasks are performed at the same time…while players in the various organizations exchange tasks in a prestige-less manner" (p.162) (see Figure 2).

Forms of collaboration

Sequential collaboration
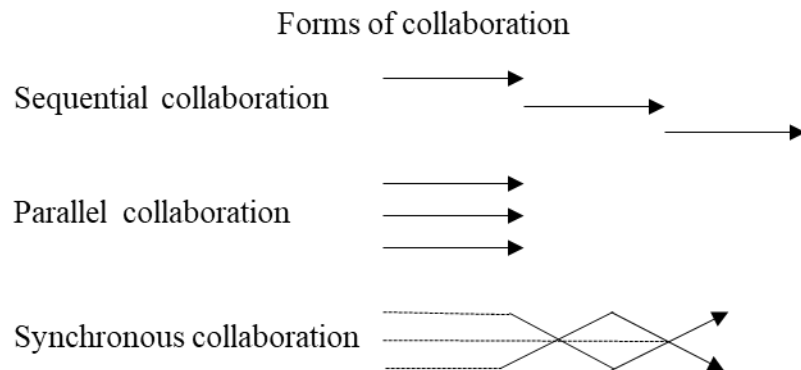
Parallel collaboration

Synchronous collaboration

Figure 2: Berlin & Carlström (2001) p. 163

EM and carceral administrators seem to prepare for and respond to disaster at the same time yet independent of each other despite their mutual goal of protecting vulnerable populations, inmates in this case.

Because preexisting relationships have generally been found to create greater levels of trust (Chang & Trainor, 2018), when synchronous collaboration does not exist it could be an indicator of poor relationship building. This type of silo thinking has been identified as a persistent interoperability problem for the EM community (Cole, 2010; McAleavy & Rhisiart, 2019). In their study of the transition from fire officer to emergency manager, Chang and Neal (2019) found the planning skills and ability to cultivate working relationships with others needed for EM is lacking in fire officers. This is to say that the core of the EM role involves building relationships which precludes silo thinking. EM personnel in local jurisdictions, while not carrying much direct authority, should be advising decision makers on appropriate planning and training exercises. Moreover, their experience with evacuations of the general population generates lessons learned and best practice which can be shared with the carceral world. It is unclear, however, to what extent this occurs. Reviews of the Calcasieu Police Jury's published meetings and press briefings surrounding Laura suggest little synchronous collaborative work between parish EM professionals and the CPSO (Calcasieu Parish Police Jury, 2020). The Sheriff's evacuation of the jail seemed to be independent of EM advisement, although this is not clear. This study will help uncover the extent to which LE and carceral administrators have been influenced by the EM professionals in their jurisdictions.

The collaboration of carceral facilities with EM professionals may require some new relationships, roles, and skills. To this end, Olszewski and Siebeneck (2021) recommended a four phase EM collaborative cycle which consists of Initiation, Inclusion, Execution, and Evaluation all while building trust (see Figure 3).
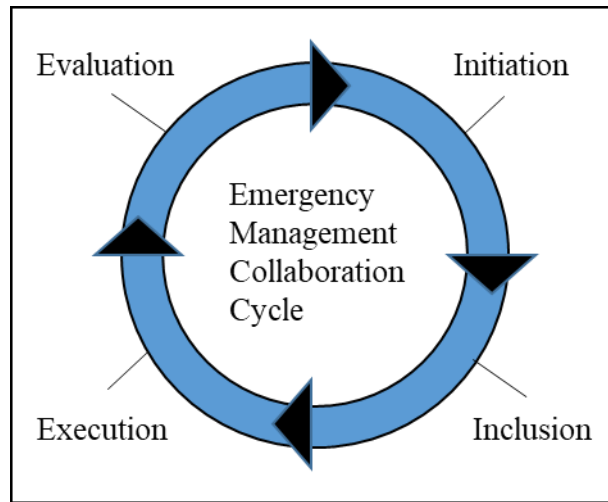
The first phase, Initiation, is perhaps the most important simply because it is a pre-disaster

acknowledgement of the need to establish communication between disaster partners. Inclusion

and Execution speak to the acceptance into the larger collaborative effort and the performance of

their assigned functions. These include but are not limited to planning, participation in exercises,

response duties, and recovery efforts. Finally, the cycle moves to Evaluation where an After

Action Review of Execution takes place. Current EM and carceral facility collaboration appears

to be in the Initiation phase as neither seems to have included the other in plans or exercises

(Dement & McAleavy, 2021). It is anticipated that this study will further our understanding of

how and when these two can collaborate.

Webb (1999) pointed out the contemporary application of organizational behavior typologies in

his study of the work put forward by the Disaster Research Center (DRC) and Dynes (1970). The

expanding of an organization is a change in its structure to add people or units. The Red Cross is

a good example of this when it adds people to its ranks in response to disaster. In contrast,

extending organizations do not change their hierarchical structure but instead modify their tasks.

Carceral facilities in disaster fall into this second group. The core work of correctional agencies is

the protection of public safety by securing inmates in facilities that are safe, humane, cost-efficient, and oriented toward rehabilitation, not disaster planning (US Bureau of Prisons, 2020a). As a result, they must modify what they do and how they do it during all four disaster phases. This study seeks to better understand this and posit recommendations for improvement.

Research Questions

Based on the preceding theoretical framework, this study focuses on carceral administrators, EM professionals, and others as needed, who have been involved in the decision making and execution of either the evacuation or shelter in place of inmates in a slow onset disaster. Although there are scenarios where a low probability, no notice (FEMA, 2019) event may necessitate inmate safeguarding, this study deals with the relatively routine disaster occurrences in known hazard regions. This is because the repeated and predictable harms caused by these regularly occurring events are not adequately mitigated across the carceral spectrum (Dement & McAleavy, 2021; Omorogieva, 2018; Savilonis, 2013). Moreover, little is known about carceral agencies who have been successful in reducing routine disaster harm. Accordingly, this study's central research question is:

RQ1: *What are stakeholders doing, or not doing, to prepare carceral facilities for predictable, slow onset disaster?*

It can be difficult to justify the cost and effort involved in preparing for a low-probability event, but this should not be the case for hazards occurring on a regular basis. Dement and McAleavy (2021) clearly identified a recurring disaster preparedness problem in the carceral world with serious consequences for human life and wellbeing. The discovery of methods which may reduce this harm by filling the knowledge gap, making policy recommendations, or simply sharing a best practice constitute a worthwhile undertaking. This leads us to:

RQ2: W*hat have been some of the methods of dealing with routine disasters that have yielded successful outcomes?*

And

RQ3: W*hat problems were encountered in making this happen?*

It is expected that disasters examined in this study - having occurred within the span of the COVID-19 pandemic - will have unique health-related problems.

It is expected that documents will also be available for analysis. These may include policies, training materials, aid agreements, budgets, and planning documents among others. References in these documents to regular planning and training contain clues which may explicitly name or infer who is included or excluded. Additionally, these documents may reveal purchasing patterns for resources needed to successfully weather a disaster event. Dement and McAleavy (2021) determined that what is missing in disaster preparedness may be just as important as what is present. For example, the NIC disaster guide for jails and prisons is a good way to begin. So,

RQ4: T*o what extent are carceral administrators aware of and using the NIC guide, or any others?*

As noted, EM and carceral administers should be working together pre-disaster to avoid or at least mitigate potential harms. Because this requires collaboration between the two, it is important to assess its extent.

RQ5: T*o what extent are LE and carceral administrators collaborating with the EM professionals in their jurisdictions?*

The need for some modification to existing carceral disaster operations is expected. So,

RQ6: T*o what extent must carceral facilities modify their disaster operations?*

Summary of Research Questions (RQ):

1. What are stakeholders doing, or not doing, to prepare carceral facilities for predictable, slow onset disaster?

2. What have been some of the methods of dealing with routine disasters that have yielded successful outcomes?

3. What problems were encountered in making this happen?

4. To what extent are carceral administrators aware of and using the NIC guide, or any others?

5. To what extent are LE and carceral administrators collaborating with the EM professionals in their jurisdictions?

6. To what extent must carceral facilities modify their disaster operations?

CHAPTER III

METHODOLOGY

Philosophical paradigm

It is important for any research project to illuminate for the reader the influences surrounding why

a method was chosen. Not only does this benefit the reader, it also provides an opportunity for

self-reflection by the researcher. One's philosophical view shapes research development,

therefore a clear understanding of a researcher's perspective adds clarity and purpose to the study.

Philosophical views are often invisible to others but drive both design and execution. The

philosophy underlying this study is a pragmatic worldview (Slife & Williams, 1995). Pragmatism

differs from both the post-positivist view of reality, an objective cause and effect independent of

individuals, and the social constructionist view of reality as being constructed within the mind.

Peirce (1905) framed pragmatism as critical common-sensism. By this he meant seeing things as

they are in the context within which they exist. A critical part of the context surrounding

pragmatic outcomes are the values and visions of human actions (Cherryholmes, 1992). Put

another way, "pragmatism as a worldview arises out of actions, situations, and consequences

rather than antecedent conditions (Creswell & Creswell, 2018, p. 10)." Developing solutions to

problems and determining what works is the essence of pragmatism (Patton, 1990). Pragmatists

combine post-positivism and constructivism in that they believe in "an external world

independent of the mind as well as that lodged in the mind (Creswell & Creswell, 2018, p.13)."

Building on this brief description of pragmatism, it seems appropriate here to include a short narrative regarding the development of the PI's pragmatic worldview. This frames the research design and discussion. After completing an undergraduate degree on an Army scholarship, I was commissioned and sent to lead a platoon during multi-national peace keeping operations. As an officer, I was taught to use the motto "mission first, people always" as a guide for my decisions and behavior. This phrase means doing what it takes to get the job done while not forgetting to take care of the people who work for and with you. This was, and still is, a valuable guide for me as it prompted my looking for creative ways to vault obstacles to an objective. For example, during my service years I wanted to complete my graduate degree but was concerned about having the time because of the operational tempo my unit experienced. This was before the era of online classes so I knew a classroom presence would be required. I decided to use night classes during the periods between my deployments to complete the required credit hours. This often demanded using personal time off (leave) to write papers.

After the military I entered the business world and spent decades as a supervisor meeting performance metrics while dealing with the human problems inevitably encountered in team-oriented work. As a result, my professional and personal paradigm became focused on the pragmatic consequences of actions. This was especially true when I delegated tasks. My direct reports would sometimes ask, "How do you want this done?" to which I would reply, "Whatever works is fine with me."

A pragmatic approach is appropriate for this study because the goal is to explore solutions to the problem of inconsistent carceral disaster preparedness. What matters is understanding what works for safeguarding inmate wellbeing during disasters regardless of whether reality exists independent of the mind or is constructed by it. Truth is what works to avoid harm then sharing and duplicating it.

Data collection

How data surrounding preparedness and response in carceral facilities was uncovered is focused upon herein. The proposed research questions and underlying pragmatic paradigm suggested a semi-structured qualitative interview and document analysis research design. Because little is known about the how, what, and why of carceral facilities in disaster, this study sought to determine current practices by interviewing EM and carceral professionals in regions where recent disasters have forced both general and carceral evacuations. The preceding literature review indicates disaster preparedness and responses vary greatly between facilities. This appears to be one of the few consistent characteristics of carceral disaster preparedness. This dissertation is intended to be foundational work for later studies which build upon initial findings using similar or differing philosophies and methods.

The goal of this exploratory, qualitative, and inductive study is not to generalize (Baxter & Jack, 2008); therefore, a relatively small initial sample was purposefully chosen with snowball recruitment following (Mason, 2018). Purposive sampling (Creswell & Creswell, 2018) began by selecting candidates who worked either in EM or a carceral facility and experienced a disaster where carceral evacuation was needed within 2020-2021. This ensured accurate and specific knowledge of how decisions regarding inmate safeguarding were made or how they were operationalized. A Google search for disaster related jail and prison evacuations during 2020-2021 using the key terms jail evacuation, prison evacuation, and disaster evacuations identified the regions and specific jurisdictions for inclusion in the purposive sample. The PI had the specific goal of completing all interviews before July 2021. This was an important goal for several reasons. First, July is a busy month for many of the EM professionals in the regions chosen for sampling making them less available. Not only is July an early month in the annual US Hurricane season, it is also one of the peak months for wildfires. The majority of jail and prison (J/P) evacuations examined in this study were because of these two hazards. Second, July is one

of the highest months for vacations for both EM and carceral employees. The PI wanted to complete the interviews before these professionals were made more unavailable because of personal time off.

Candidates who work in occupations related to EM and carceral administration but not specifically named in this proposal were expected to be uncovered through snowballing and then included in the study. This was because the extent of the collaborative network was unknown and valuable data may emerge from other tangential areas. For example, it is expected when interviewing Sheriff's deputies who administer the county jail that there will be references to persons inside and outside the department who have influenced the process. Initial media reports regarding Laura in Calcasieu Parish hint at this as well during livestreamed Police Jury briefings and meetings. Calcasieu Parish Sherriff Tony Mancuso frequently appointed a deputy commander to speak on his behalf during parish wide briefings which alludes to the influence these persons may have on decision making within the CPSO and by extension the parish jail. Initial candidates are expected to provide access to others with similar backgrounds through snowball sampling (Marzano & Scott, 2009; Yin, 2018). A total of at least 30 interviews, inclusive of the pilot interviews, were desired to build a sufficient pool of data from which to conduct analysis. However, the decision to continue or stop data collection was made based on when theoretical saturation was achieved; meaning no new themes emerged (Glaser & Strauss, 1967; Saumure & Given, 2008). This was monitored throughout the study and data collection was halted after 41 interviews of EM and carceral professionals. All interviews were recorded for transcription and analysis, more on this process below.

Institutional Review Board (IRB) clearance was obtained, and no interviews were conducted prior to IRB approval. Media accounts related to disasters forcing carceral evacuations were gathered while waiting on approval. This was done to build a general base of knowledge about the specific disaster in each jurisdiction. Once the IRB application was approved, a consent form

(Appendix B) was used for each participant and collected electronically via Qualtrics. Verbal consent was also obtained at the beginning of the interview. Each interview was expected to last no more than an hour and this timeframe was built into both the approved consent form and the general information letter. This proved to be an adequate amount of time for a thorough interview. Two follow up interviews were completed and each lasted less than 30 minutes. Interviewees were assigned an alpha-numeric identifier to ensure confidentiality and all data was stored on a local drive owned and controlled by the PI.

These same interviewees were expected to have access to written documents which could be subjected to analysis. Emergency Operations Plans (EOP)/Incident Action Plans (IAP), Guides, After Action Reports (AAR), and training plans can support or refute interview findings, assuming they are made available. If the documents can be accessed before the interviews, analysis of them can shape the direction and questions of the interviews themselves. Media accounts of the overall disaster and the carceral response will also be used to confirm facts and shape probing interview questions. These media accounts often include details surrounding hazard onset and official evacuation orders, and clues to the state of media relations with EM and carceral personnel.

Multiple data sources provide triangulation to enhance credibility, reliability, validity, and transparency (Creswell & Creswell, 2018; Geraghty & Velez, 2011). The convergence of information about the research topic from different sources tests the validity of the findings by partially overcoming the deficiencies of only one method (Carter et al., 2014; Denzin, 1989). Multiple data sources are used in qualitative research to develop a comprehensive understanding of the phenomena being studied (Hayashi et al., 2019; Patton, 1999). The in-depth individual interviews in this study are compared to each other, federal and state disaster guides, media accounts, and local EOP/IAP to create a well-rounded view of the topic. A broad understanding is the desired outcome.

Semi-structured interviews and document analysis were used to gain insight into what, if any, approaches are being used to prepare carceral facilities in known hazard regions for predictable disasters. Semi-structured interviews are less ridged than either surveys or structured interviews allowing the emergence of concepts and theories (Bryman, 2016). This is an exploratory and inductive study so there are few guiding theories. Metaphorically, this study is intended to turn on a flashlight in a dark room; not everything will be visible at once, but we can begin to move around.

Once the proposal was approved in late February, an Institutional Review Board (IRB) application was submitted and took approximately four weeks to clear. As such, data collection began in mid-April 2021. The hurricanes and wildfires of 2020 which occurred during the COVID-19 pandemic were the foundational disasters included in the IRB. The IRB application included snowball sampling as a method to expanded the scope of the interviews beyond the locales of direct hazard impact. Referrals from interviewees to collaborative partners or others who had similar disaster experiences expanded the number of interviews and the range of disasters to include man-made. Regular references to other disasters experienced by the interviewees contributed to the corpus of data.

The COVID-19 pandemic and distances involved prompted the decision to use the Zoom virtual meeting platform as the primary method of meeting with interviewees. Recent studies have shown the value of teleconferenced interviews as a method for data collection with several advantages over traditional in-person or phone based methods (Archibald et al., 2019; Gray et al., 2020). Archibald et al. (2019) found participants rated Zoom interviews above traditional mediums because of ease of use, cost-effectiveness, data management flexibility, and data security. For this study, Zoom had the advantage of allowing behavioral observation of interviewees similar to in-person interviews while still maintaining social distancing during the COVID-19 pandemic (Gray et al., 2020). Zoom interviews are potentially better than pandemic

induced mask-to-mask interaction because they allow observation of facial expressions and other body language. Moreover, the recorded Zoom interviews provided the opportunity to review these after the fact for more detailed analysis. Another advantage was that national sampling was possible without the expense of travel. Where Zoom was either not available or not practical, phone interviews were conducted.

A broad set of 18 open-ended questions was approved by the IRB and formed the interview instrument (see Appendix A). Candidates were asked to share their experiences and knowledge. The interview instrument was kept below 20 questions to allow a tailored conversational path with each participant while being mindful of their time (Ravitch & Carl, 2021). The first 15 questions were related to the central RQs while the remaining three examine the efficacy of Zoom as a qualitative method. The interviews were so detailed around pre and post-onset operations however, that the time allotted for each interview was filled by the first 15 questions and related probing. As a result, the three zoom questions were omitted. This was of little consequence to the findings because none of the six RQs were concerning the efficacy of virtual interviews. Moreover, more than half of the 41 interviews were completed using a method other than Zoom (see Table 1).

Questions progressed from general in nature to more specific (Gill et al., 2008). This was used to shape the direction of the interview but not limit its flexibility (Denscombe, 2017; Majid et al., 2017). Some prompting for examples was needed. Questions probed how interviewees saw their role within the disaster preparedness network, the availability of resources, and overall collaboration.

Two pilot interviews were conducted using a local EM official and a local carceral administrator. One of the pilot interviews was face to face (F2F) and the other conducted via Zoom. The F2F interviewee was happy to meet in person and get a break from virtual meetings which were the

norm during the months of the pandemic peak. The other pilot interview was via Zoom and the interviewee commented on how routine virtual meetings had become. The length of both interviews and their comments on how unremarkable virtual meetings had become prompted the dropping of questions related to the efficacy of Zoom for all following interviews.

On the advice of one committee member, both pilot interviews were asked to sign the consent form, which they did, and the interviews were recorded. This was a prudent move because both interviews yielded valuable data and shaped those that followed. The EM official was interviewed in person and was the only face to face interview in this study. The carceral administrator in the second pilot interview had spent 37 years working for the State Department of Corrections (DOC) then was asked to become an administrator for a large county jail. This allowed for not only a carceral perspective on disasters at both the county and state level, but also gave the principal investigator (PI) the opportunity to ask for advice. The PI shared with this person the narratives of the carceral facilities who had to evacuate their inmates during 2020-2021. This career corrections professional was then asked what questions they would want to have answered about how the impacted institutions prepped for and executed these. The questions posed by this veteran administrator were invaluable in shaping the interviews that followed. The relationships built with these pilot interview persons over time in the PI's capacity as an instructor in the Criminal Justice Department at the University of Central Oklahoma (UCO) encouraged candor and useful feedback. This process was intended to, and did, improve the quality of the interview instrument and validated interview protocol (Harding, 2013). Steps for the pilot interviews followed those proposed by Majid et al. (2017). These included selecting questions, choosing participants, conducting the interview, and making modifications.

Once question modifications were made based on feedback from the pilot interviews, an initial six-person purposive sample of EM and carceral administrators was chosen from eligible jurisdictions across three regions who experienced a carceral evacuation in response to a hazard

during 2020-2021. The map below (Figure 4) represents the regions where interviews were conducted. These hazards occurred with different frequency and scale across the various referenced jurisdictions. Jurisdictions interviewed experienced as least one hurricane, wildfire, or man-made disaster, in addition to the COVID-19 pandemic, during 2020-2021.
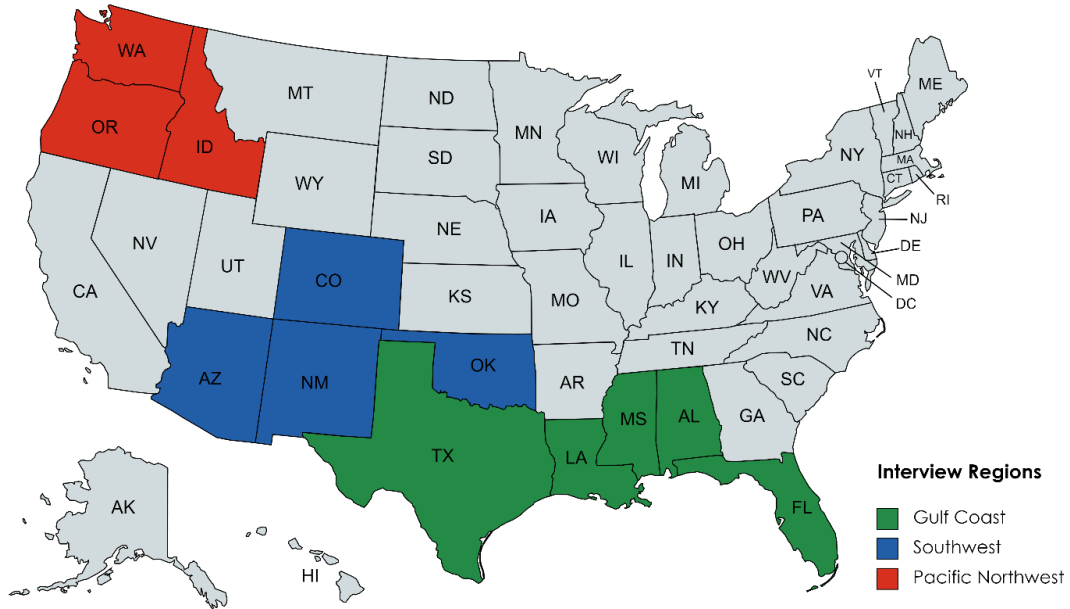

Figure 4: Interviewed regions

This initial sample allowed for snowballing later as the collaborative network involved in carceral disaster response was uncovered (Mason, 2018; Patton, 1990; Ravitch & Carl, 2021; Yin, 2018). Snowballing during the interviews helped reach a total of 41 interviewees (Table 1).

Interview method				
Zoom	Phone	F2F	Email	Total
16	20	1	4	**41**
Interview level				
	Cnty	State	Other	Total
EM	13	3	1	**17**
Carceral	16	8	0	**24**
Carceral descriptives				
Impact J/P	Host J/P	DOC	**Total**	
12	6	6	**24**	

Table 1: Interview descriptives

Although names, and sometimes contact information, were provided by interviewees for later interview candidates, making contact and gaining agreement to participate was still a challenge. This was especially true if an EM person provided a name for someone in the carceral community. When contacting carceral professionals, the names of previous interviewees were used as often as possible to help establish credibility and build trust.

Interview methods

The interviews were completed using four different methods (Table 1). The method of the interview was chosen by the interviewee and each has its advantages (Fritz & Vandermause, 2018; Gray et al., 2020; Hershberger & Kavanaugh, 2017; Qu & Dumay, 2011). The Zoom platform was the primary method approved by the IRB and was intended to be used for all the interviews. By the end of the data collection period in early June, 41 interviews were completed (see Table 1). These interviews occurred at both the county and state levels for impacted and host carceral facilities and EM. Only one interview was conducted face-to-face (F2F) with an EM professional who was part of the piloting process.

Each interview lasted between 45 minutes to an hour and was designed with this timeframe in mind. Zoom interviews were recorded and the transcription software, Otter.ai (hereafter referred to as Otter), was embedded within Zoom. This allowed for the audio portion of the interview to undergo immediate automated transcription after ending the Zoom meeting. Although Otter auto-captured the Zoom audio, a separate audio recorder was placed next to the speakers of the computer to serve as a backup in the event of problems with Zoom. Otter also has an import feature which allowed for recorded phone interviews to be uploaded and transcribed.

Purposive sampling targeted carceral administrators and EM professionals for interviews (Ravitch & Carl, 2021); specifically, those who are regularly exposed to predictable and slow onset hazards like hurricanes or wildfires. Although Zoom was intended to be the primary method, more phone than Zoom interviews were conducted (see table 1). This was for several reasons.

First, host jails were careful to reserve bandwidth for inmate Zoom court appearances and attorney visits. For example, one impacted jail evacuated over 1,000 inmates to other jurisdictions and the host facilities were hours away from the impact area. This presented problems getting inmates in front of judges for court appearances and attorney consults. Host jails set up laptops wherever they could in their facilities to accommodate inmate legal needs. Because the interviews were conducted during normal business hours, jail administrators were reluctant to use what bandwidth was available to them for this study. All of the impacted and host institutions interviewed had been using a virtual platform, mostly Zoom, as the primary means of getting inmates to court appearances and attorney visits during the pandemic. This made them familiar with the process although not at the same level once host facility headcounts swelled because of the evacuations.

Second, three jail interviews intended to be completed via Zoom were switched to phone because of technical and user difficulties. Two of these interviews had poor connectivity to Zoom likely as

a result of their rural location. After several minutes of troubleshooting, the decision was made to conduct them via phone. Archibald et al. (2019) encountered this same problem in 25% of the Zoom interviews conducted in their work. For the third interview in this group, the interviewee had been using MS Teams for daily business during the pandemic and was unfamiliar with Zoom controls. Like the above, after several minutes on the phone trying to get this person connected to the Zoom meeting, the decision was made to continue the interview by phone only.

Finally, phone interviews occurred because of voicemails left for candidates during first contact attempts. Reaching carceral professionals was especially difficult because there were several organizational layers to navigate in order to speak with the decision makers who were responsible for, and active in, inmate evacuations. If a voicemail had to be left during a first contact attempt, someone would return the call and an agreed upon date and time for the full hour-long interview was scheduled. However, jail administrators and EM professionals are busy with their daily duties so sometimes when they would return a call and an attempt was made to schedule a full interview for a later date, they said now was the best time. As a result, verbal consent was gained, and the impromptu interview would begin. Because the PI was never sure when a contact call would be returned, an audio recorder and a notepad were carried at all times when away from the office. This was a wise decision because this allowed for immediate interviews without the need to try and get back in touch with a candidate. Notes were made on the spot and then the audio was uploaded for transcription once the PI returned to the office. As part of the note taking process, immediately after the interview the PI would jot down any thoughts related to codes, themes, or connections to other interviews or literature.

Email interviews were conducted with four persons. These individuals declined both a phone and Zoom interview but agreed to answer questions via email. While this prevented real-time probing questions and observation of interviewee behavior, these limitations were mitigated by several advantages of the email method. Previous qualitative research done using an asynchronous email

interview found interviewees had more time to reflect on the questions before answering, were more comfortable with the communication medium, were free to reply day or night if business hours were too hectic, and made transcription easier (Burns, 2010; Hershberger & Kavanaugh, 2017; Ratislavová & Ratislav, 2014; Saarijarvi & Bratt, 2021). Moreover, Hershberger and Kavanaugh (2017) found email interviews to be equally as effective as phone interviews for providing insight into key decision processes. This was especially important for this study which examines EM and carceral executive decisions in disaster using interview questions 10 and 12 surrounding evacuations and the influence of stakeholders (see Appendix A).

Emergency management interviews

First contact with an impacted jurisdiction began with the EM office. A recommendation from the dissertation committee during proposal defense was to begin with the EM professionals in the jurisdiction as they would probably be more likely to talk. This was good advice as it turned out to be true. Indeed, the majority of EM professionals contacted showed genuine enthusiasm in participating in this study. Carceral interview candidates contacted prior to conducting EM interviews in the same jurisdiction were not so eager. It took them days longer than the EM persons to return an initial email or phone call.

Making first contact with EM professionals in the sampled regions was not always easy. Looking for EM contact information via the web yielded mixed results. Large EM offices in metropolitan counties had standalone websites with phone numbers and email addresses. More rural counties had the EM office tucked into general county contact information making it harder to find. Moreover, an EM contact number in a rural county was just as likely to be to a general switchboard as it was to be a direct line to the EM staff. Once a legitimate number was found, a phone call was made to introduce the PI and research topic. If an email address was to be had, the IRB approved introduction letter was sent just prior to the phone call for reference. If contact was

made with the targeted person during this first call, the IRB approved phone script was followed, and a conversation would begin about the general nature of the study. These introductory conversations were less than five minutes long and ended with scheduling the full interview and sending the consent form to the candidate.

During the EM interviews, the names and organizations of their disaster partners emerged as part of their operational network. When questioned about them, the interviewees talked about their relationship with that entity and how they knew them. These were seeds of the snowball for the next interview. Often these persons were other EM staff who handled a different disaster Emergency Support Function (ESF) but occasionally they were a contact at the county Sheriff's office or state prison who they knew personally or knew how to reach. With the exception of one rural county, a minimum of two interviews in each EM office and correctional facility was conducted.

The EM interviews were conducted at the county and state level with one third party (See table 2). Not surprisingly, the number of county level EM interviewees in the impacted and host jurisdictions exceeded those at the state level. Consistent with federal guidance, county level EM and carceral facilities handled hazard preparation and response on their own with assistance from the state level only when hazard impact went beyond local capabilities and resources (FEMA, 2019). Interviews gathered from state and county levels as well as numerous persons within the same jurisdiction and agency was done to capture qualitative data from multiple perspectives. This bolsters the validity, credibility, and reliability of this study as the convergence of multiple accounts of the same phenomena from within the same agency are transactional triangulation (Cho & Trent, 2006; Maxwell, 2002, 2017). The maximum number of interviews in one jurisdiction was eight. One rural county had an EM staff of one. This person was a sworn deputy in the sheriff's office whose fulltime role was as the county EM. Prior to assuming the EM role, they had been in law enforcement with the sheriff's office for 15 years. As will be shown later,

this had its advantages for the county jail's response to the impacting disaster. The one third party EM interview occurred close to the end of the data collection process as a direct result of earlier interviewee responses.

The majority of EM professionals interviewed referenced their use of WebEOC to facilitate resource requests and help maintain situational awareness. However, as will be shown more clearly in the Findings section of this study, carceral administrators had little to no knowledge of WebEOC, its capabilities, or its supporting software. This is in spite of WebEOC's importance to their disaster preparation and response. Jurisdictions in all the interviewed regions, as well as most of the rest of the nation, use some form of the Juvare developed WebEOC software. This prompted an interview request with the Juvare development team which was granted. This Zoom interview included not only questions around Juvare's role in disaster evacuations, but also a demonstration of the de facto national disaster software, WebEOC, and its related evacuation platform EMtrack.

At the end of each EM interview, I asked if I could use that person's name when I called or emailed the administrators at the correctional center. None of the EM persons had a problem with using this technique to improve the probability of gaining access to the carceral entity in their jurisdiction. Even when the EM interviewee did not know anyone from the evacuated corrections facility, when I made a call or sent an email to the corrections professionals the existence of a relationship with a local did help with securing the next interview. Additionally, EM interviewees provided both publicly available and internal documents for use in the study.

Carceral interviews

Gaining interviews with the criminal justice (CJ) organizations was more difficult. At the outset of the study a percentage of interviews and document requests was expected to be denied or delayed. Seven carceral interview requests were either denied verbally, by email, or the

interviewee did not join the interview or answer the phone after agreeing to the interview at the scheduled time. These initially scheduled participants would not respond to follow up requests.

Carceral interviews were conducted with both impacted facilities (sending inmates) and host facilities (receiving inmates). Law Enforcement entities, including corrections, often struggle with transparency and its members are socialized to embrace a culture of non-disclosure (Chanin & Espinosa, 2015; Schein, 1996). Indeed, even attempts made in the PI's role as a CJ faculty member at UCO to request information or guest speakers for classes are sometimes met with suspicion. The one-page introduction letter was somewhat helpful in gaining access as it provided legitimacy to the academic nature of the interview request. During initial conversations with the corrections point of contact, stressing the purely academic nature of the interview allayed concerns that the organization would be placed in the media spotlight. At the county level, calling the public information officer (PIO) for the sheriff's office in large jurisdictions was a guaranteed call back as they were used to fielding media requests. This was a great help because once the nature of the interview request was fully understood, the PIO put me in contact with someone in the county jail who was either involved in the evacuation or knew who the next person was to reach this executive. This executive was usually a Lieutenant or Captain who had operational control of the day-to-day jail activities and was tasked with actually moving or receiving inmates during the evacuation. Interviews with the more rural and smaller county jails were conducted with the actual Warden or Deputy Warden.

Carceral interviews included administrators from both the impacted and host jail/prison (J/P) as well as members of the state Department of Corrections (DOC) who either helped facilitate an inmate evacuation or were directly involved (See table 2). These interviews represent just over half (24) of the total number of interviews (41). More interviews were conducted with impacted than host facilities because examining decisions and processes around evacuation or shelter in place actions was one of the main aims of this study.

Prior to the interviews, national level disaster related documents focusing on evacuation and organizational roles were gathered. These were mainly published by FEMA although the Bureau of Prisons and National Governors Association were represented as well. For the state and county level, at the end of their interviews both EM and carceral professionals were asked to provide documents which may help the study. Having just completed an hour-long interview on the research topic, interviewees had a reasonably good idea of what the PI was trying to learn. As a result, they provided what documents they could (see Table 2).

Level			
Fed	State	Cnty	Total
6	13	21	**40**
Type			
EOP /IAP	Guide/ Annex	AAR	Total
23	12	5	**40**

Table 2: Document descriptives

A total of 40 documents were collected for analysis and comparison with interview narratives. The majority were in Portable Document Format (PDF) with a small number being in MS Word format. These documents were labeled and sorted by the PI for organization. After reviewing them as a corpus, three categories emerged. Documents were grouped as belonging to either an EOP/IAP (Incident Action Plan), Guide/Annex, or After Action Review (AAR) (see table 2). As can be seen in the above table, the majority of the documents were either guides or specific plans to address regional hazards.

Analysis Method

Transcription

Analysis began with verbatim transcription of the recorded interviews. Verbatim transcription is the written word-for-word capture of verbal data including stutters, stops and starts, pauses, and grammatical errors (Mergenthaler & Stinson, 1992; Poland, 1995). Transcription is an early stage of data analysis and should be rigorous to preserve the integrity of the data as much as possible (Wellard & McKenna, 2001). Converting an interview to textual data will never capture everything that happens during an interview but is an attempt by the researcher to record as much detail as possible including nonlinguistic observations, speech patterns, intonations, and emotions (McLellan et al., 2003; Mergenthaler & Stinson, 1992; Poland & Pederson, 1998).

All transcription was completed by the PI using the Otter.ai software (hereafter referred to as Otter). Otter has been used as an effective tool by scholars who have used Zoom for qualitative research (Archibald et al., 2019). Otter is a recording and transcription software which the PI used for both Zoom and phone audio. The Basic version of Otter was tested by the PI in a separate UCO study prior to beginning data collection for this dissertation. Once its efficiency and accuracy were verified, the Pro version was purchased. The Pro version of Otter allows for 6000 minutes of audio to be transcribed per month.

When embedded within Zoom, Otter extracts the audio file after the host ends the meeting and begins auto-transcription. Conversion of the audio data to text took about 20 minutes per one hour of audio. Once conversion was complete, a notification was sent to the user. During transcription using Otter, a computer-generated highlight moves along the text in sync with the audio while the transcription is under review. The reviewer has the ability to pause, rewind, skip, or fast forward during the process to make corrections where needed. As expected, when interviewing government agencies, an alphabet soup of acronyms emerged which Otter had problems with. For example, when a corrections professional would say the letters DOC to refer to the Department of Corrections, this was transcribed as dee oh see. Otter also replaced less well-known acronyms with those used more frequently. For example, when an EM professional used the letters EOC to

refer to an Emergency Operations Center, Otter transcribed this as EEOC (Equal Employment Opportunity Commission) instead. These errors were corrected manually by the PI to ensure accuracy (McLellan et al., 2003; Wellard & McKenna, 2001).

Otter can also ascribe text in the transcription to a specific speaker with a tag. Once the two speakers in the interview were tagged – the PI and the interviewee – Otter would attempt to auto-tag each speaker when normal breaks in the speech pattern appeared. Speaker tagging was edited manually by the PI when needed to preserve accuracy (Wellard & McKenna, 2001).

Once the transcript was amended for accuracy, it was exported to a text file, saved to a local non-networked hard drive then loaded into the analysis software. Recorded Zoom interviews were downloaded to the same local drive for later observation then deleted from Zoom within minutes of the end of the meeting to prevent any possibility of a confidentiality breach (Oklahoma State University, 2020). Phone interview recordings, and the one recorded in-person interview, were added to Otter the same way (Silver & Lewins, 2014).

Review and amendment of the transcription took the PI between 45 minutes and an hour per interview. This process was used to ensure the accuracy of the Otter.ai transcription, and to review both text and audio (McLellan et al., 2003; Wellard & McKenna, 2001). Reading the transcripts and listening to the audio was the genesis of coding and theme development as ideas occurred (Bryman, 2016; Creswell & Creswell, 2018). Transcription was initially expected to be completed by a third party; however, Otter's accuracy and ease of use rendered this unnecessary.

Once transcription was complete the PI conducted a brain-dump session. This was an effort to capture on paper all the ideas swirling around before they began to disappear. By simply using a blank word document then typing anything that entered the brain related to the study, the PI was able to place on the page codes, thoughts about themes, recommendations, and best-practices which could be given shape later. Although this was the first time to use this technique, the PI felt

it was a good way to secure information that was spilling out before it was lost. Indeed, this document was a useful reference when the time came to add form and organization to the study.

Qualitative Analysis Software

The Atlas.ti software (hereafter referred to as Atlas) was used for qualitative content analysis beginning with the pre-interview collected documents and first completed transcriptions. This software was chosen because its output has been observed by the PI in other research and the committee chair was familiar with it making the software a logical choice. Moreover, Atlas was also recommended by peers and the literature which supported its use as an analysis tool (Silver & Lewins, 2014). A useful feature of Atlas as an analysis tool is the ease with which multimedia files can be imported. Indeed, text files of the transcripts created in Otter were smoothly imported into Atlas for analysis as were the documents described in the data collection section.

Both interviews and collected documents were organized for analysis using the grouping feature of Atlas. Because Atlas counts interview transcriptions as an imported document, the use of the word document hereafter includes transcription text. Before coding began, all collected documents were sorted into nine groups for later analysis and ease of identification (see Table 3).

Groups
EM
Carceral
County
State
FEMA
Non-interview
Gulf Coast
SouthWest
NorthWest

Table 3: Document groups

Discourse analysis

Discourse analysis was utilized; although, this process was somewhat complex (Cheek, 2004) as we cannot simply view language as separate from social and historical context (McGregor, 2003). The interpretation of language, underlying themes, and meanings must be identified and categorized (McAleavy & Rhisiart, 2019; Mogashoa, 2014). Critical discourse analysis helps frame the social practices and institutions surrounding a phenomena helping to make understanding possible (Hodges et al., 2008). The social and historical context of interviewed professionals will be important to interpreting the words and phrases they use. Both EM professionals and carceral administrators in the Gulf Coast Region referenced their experiences with Hurricanes Rita, Gustave, Ike, and Harvey. These experiences, as will be shown, influenced their thinking and planning for the events of 2020-2021. For example, interviews with CPSO members must be viewed with the response of the Orleans Parish Prison to Hurricane Katrina in mind. The administrators of the CCC would have been aware of the reports and media scrutiny surrounding Katrina during their preparations for Laura (see Dement & McAleavy, 2021 for examples). This ostensibly would contribute to how they speak about and plan for their own recurring hurricane exposure. Additionally, the civil unrest of 2020 surrounding the shooting of George Floyd, the rise in influence of the Black Lives Matter organization, and the defund the police sentiment may have shaped the thinking of carceral administrators. These facilities are either controlled by a sheriff, who is a politician, or part of the state's Department of Corrections. Either way, both are susceptible to the influences of social forces.

Data validity

Several strategies were used to ensure data validity. First, triangulation was used to compare planning or training documents, published guides, AARs, and media accounts with practitioner responses. This included not only how print documents aligned with responses from interviewees

within the creating agency, but also those who were referenced externally. For example, hazard mitigation and EOPs created by EM professionals within a jurisdiction have been found to reference third parties who may not even be aware they have a role to play in the disaster plan or are rarely, if ever, active in planning (Chang et al., 2018). Based on previous work (Dement & McAleavy, 2021), it is anticipated that this may be the case for carceral facilities within this study. If this were found to be so, it would lend credence to the theory of fantasy documents which are created by EM professionals with no real impact on disaster readiness (Clarke, 1999; McConnell & Drennan, 2006).

Second, the PI used an academic peer to debrief the perspective on the findings. This was intended to make certain the account of the findings made sense to others (Creswell & Creswell, 2018). In addition to the committee chair, two seasoned research colleagues of the PI were used for the debrief. Each of these two colleagues have decades of social research experience and were consulted at multiple points throughout the study. Of special importance was their perspective as outside observers to the research. While the committee chair was also an important perspective, collaboration with the PI on previous work in this subject area gave them special knowledge which was not readily known to others.

Finally, the PI reflected on how previous experience in the military, civilian career, and academia influenced interpretation of the results. This reflection was, in-part, laid out in the philosophical discussion at the beginning of the Methods chapter. The pragmatic application of study findings was a guiding principle during analysis. This will allow the reader to better understand and critically examine the PI's perspective.

Ethical considerations

Ethics are a key research principle (Baxter & Jack, 2008; Biddle et al., 2013; DiCicco-Bloom & Crabtree, 2006). As such, ethical precautions were taken to protect all who participated within

this study. The proposed research passed through the Oklahoma State University IRB (Oklahoma State University, 2020). An expedited review was expected and granted because data collection occurred through interviews and document analysis so risks to human subjects were considered minimal. All interviews were conducted in a confidential manner and prior consent was obtained. The template for the human subject research consent form was downloaded from the OSU IRB website, modified for this study, and a copy can be found in Appendix B. As noted earlier, the approved consent form was the preferred means of ensuring participants were informed of their rights (Browne & Peek, 2014). Verbal consent was obtained in those cases where interviewees either wanted to begin the interviewee during first contact or neglected to take the time to digitally sign the form.

None of the professionals interviewed have historically been considered part of a vulnerable population (Van Zandt et al., 2012). However, there was a chance that talking about the events surrounding a disaster could have engendered feelings of stress. To mitigate this, the PI maintained sensitivity to interviewee question responses and observed body language in those instances where the interviewee was visible. None of the interviewees exhibited signs of stress beyond what is normal for the work they do. Recounting their experiences in overcoming the obstacles presented by the disasters they faced even seemed satisfying. As a whole, EM and carceral professionals were eager to share how they found solutions to problems created by disaster.

CHAPTER IV

FINDINGS

Introduction

The findings are drawn from content analysis of the qualitative data corpus constructed of interviews and collected documents. Narratives from carceral and EM practioners of their pre and post-disaster behavior were analyzed alongside published plans, guides, AARs, and media accounts to draw out findings. Differences between impacted and host facilities disaster experiences were discovered and will be discussed herein.

While only public adult carceral facilities were intended to be sampled, interviews with several impacted facilities revealed that a private corrections company hosted 163 evacuated inmates from two impacted jails in 2020. This private company operates multiple jails for small rural counties and has hosted evacuated inmates during previous years. Because this private jail became a host for inmates evacuated from public jails, they were interviewed along with public facilities.

Sampled carceral administrators and EM professionals were from the county and state levels. These professionals from the sampled regions face routine annual hazards. Each jurisdiction, especially at the county level, meets disaster in its own way. Some prepare more than others. While the hazards vary, the risk to life and property is the same.

EM professionals are charged with coordination duties throughout disaster phases to mitigate risk while carceral executives operationalize and execute protective behaviors. As they exist within the same industry (EM and carceral admin) they are subject to isomorphic learning (Toft & Reynolds, 2005). Lessons learned from one area of the industry can and should be shared with others.

Coding

Atlas.ti (Atlas) software was used for coding. To identify and assign codes, the PI drew upon the recommendations of other scholars (Creswell & Creswell, 2018; Harding, 2013; Mason, 2018; Ravitch & Carl, 2021). As recommended by McLellan et al. (2003), once each transcript was scrubbed for accuracy it was read twice for familiarity then coded. The PI had several codes in mind prior to beginning the process based on previous research (see Dement & McAleavy, 2021) while most codes emerged in vivo. The PI identified 964 quotes tagged with 62 codes after completing the final coding round.

By the end of the first six interviews, the majority of the code list had been developed. The experiences of these early EM and carceral interviewees were such that a common frame of reference was identified quickly. After coding was completed on later documents, these first six were recoded to ensure all codes were consistently applied (Aberbach & Rockman, 2002). Several codes were found to be too broad resulting in high frequency use. As a result, these codes were split into sub-codes by creating categories in Atlas.ti (Erlingsson & Brysiewicz, 2017). For example, a single code for AAR was used resulting in a high frequency and broad application as all interviewees referenced AAR processes. Using Atlas, quotes tagged with this code were recoded into Internal AAR and External AAR to more accurately represent outcomes. Another example of recoding occurred with the overly broad use of the code Security. This code was refined and split into three separate codes: Inmate Sec, Staff Sec, and Public Safety.

The 62 codes were grouped into 13 categories which informed four overarching themes (see Appendix C). Each theme is addressed individually supported by appropriate quotes from key codes within categories.

***Theme 1** – Carceral facilities are not seen as an EM concern*

One of the earliest themes to emerge is the view by both EM and carceral professionals that the status of inmates during disaster, whether evacuated or sheltered-in place, is not the concern of emergency management but the purview of corrections professionals. A clear example of this theme can be seen in this quote from an EM professional in the Southwest who has a large county jail and state prison inside their jurisdiction.

"Based on my previous career experience and looking at the emergency/disaster plans or procedures we receive from the DOC facilities located within our jurisdictional boundaries, I can say the emergency/disaster planning and preparedness of jails and prisons is more aligned with facility emergency management than the comprehensive emergency management planning we do (sic)."

This was not a unique statement to EM professionals or the Southwest. An EM professional in the Northwest with a large staff and multiple disaster related prison evacuations in their jurisdiction had a similar response. Other than knowing that the prisons in the area were evacuated, they had no knowledge of the evac. Not only were they not involved in the planning or execution of this movement, they were not even informed when the evacuation was taking place. This, despite the security concerns created by over 2000 convicts moving on the same egress routes used by the civilian population. When more details were requested they said,

"You should really talk to the state police about the evacuation. I don't know much about it (sic)."

Subsequent interviews with a state DOC representative and a prison warden in this same

jurisdiction revealed the state police had only a limited role in the evac. Their role was to provide

escorts for the evacuating inmate transportation vehicles. The planning and coordination was

done only by the DOC. An EM professional on the Gulf Coast said this when asked if his

department played a part in helping with the evacuation of carceral facilities before Hurricane

Laura.

"We are not involved with the the evacuations of the prison systems or the jails within the area.
We have the marshal's office, or the sheriff's office or city police department…they're at the
[civilian] pickup point. They will provide, you know, security for the general population to make
sure that those those individuals stay within their designated area at the pickup point. And that is
about the extent of our involvement with with any any type of law enforcement evacuation (sic)."

Carceral professionals also thought their jurisdiction's Office of Emergency Management (OEM)

did not have a role to play in safeguarding inmates from disasters. One commander in the

Northwest had this to say,

"Yeah, for the most part the jail, we have to be a self-contained unit, so to speak. And so the jail,
we to some extent, can't be beholden on other people to make sure we get the job done correctly.
And so we're kind of self-contained, knowing that we can do it if it needs to be done (sic)."

A deputy commander on the Gulf Coast echoed this sentiment when asked if any of the EM

professionals in the county worked with the jail to help them evacuate.

"It's just us, the the sheriff, the chief [warden], and sometimes my commander (sic)."

When asked about collaborating with the EM office in his jurisdiction a prison warden in the

Southwest said,

"Typically my experience with emergency management that you get into is really not that applicable to a prison. My experience with emergency management is they might come in right after the work [impact], but they're gone, really before the brooms get out of a closet (sic)."

An examination of the codes and quotes underlying these thematic statements helps to illuminate the development of Theme 1 (see Figure 5).

Code	Category	Theme
Vulnerable Population	THIRA/HVRA	**Carceral facilities not seen as EM concern**
Disaster Frequency		
Natural Disaster		
Manmade Disaster		
EM exercise	Training & Exercise	
Corrections exercise		
Corrections training		
Guide use		

Figure 5: Theme 1 – Carceral facilities not seen as EM concern

Threat and Hazard Identification and Risk Assessment/Hazard, Vulnerability, and Risk Assessment

A key emergent code was the identification of vulnerable populations (see Figure 5). Before an OEM can begin to formulate an EOP/IAP, it must determine what hazards pose the most probable risk and who is most likely to be impacted. FEMA (2019) explains this process in these terms,

"Maintaining an accurate population assessment helps a jurisdiction understand the needs of the community and better estimate the resources needed to implement efficient protective action operations" (p.20) (sic).

This typically takes the form of a Threat and Hazard Identification and Risk Assessment (THIRA) or Hazard, Vulnerability, and Risk Assessment (HVRA).

The OEMs interviewed either do not conduct a population assessment at all or do not include inmates on their vulnerability maps when they do. One county level EM planner in the Northwest responded this way when asked what vulnerability assessment their OEM has done,

"We're going through right now defining what social vulnerability means to us; where are the datasets that we're going to pull into that to be able to give us the information, kind of as we look at planning and doing evacuation routes, or mass care and shelter planning (sic)."

When asked what carceral facilities exist in the jurisdiction he is responsible for, one EM professional said,

"So we honestly don't know where they all are. I know that one of our local facilities did not need to be evacuated. The [prison name] facility, it is right on the border. I would…I honestly don't know which, which county it's in (sic)."

One county level EM planner had a map of the county infrastructure but no population assessment represented on it. When asked if the OEM there had a vulnerability map they said,

"Yeah, no. Although, it is something that we've we've brought up as a gap. So I think we don't have it right now. But we hope that future iterations of that [infrastructure] map that I linked would be able to incorporate stuff like that (sic)."

A population assessment is an early and critical step in disaster planning; however, when carceral facilities are left out they are not on the minds of the OEM. Even consideration by EM professionals about carceral facility disaster readiness does not occur because they are invisible to the EM community. This invisibility is one reason interviewees do not see EM as having a role in the safeguarding of inmates.

The regular occurrence of predictable, slow-onset disasters in a hazard zone drives much of the behavior of EM professionals interviewed across all regions. One EM professional on the Gulf Coast had this to say,

"Every hurricane season, we respond in some shape, way or form for either flood or hurricane event. I'm averaging two declared disasters per year (sic)."

During the THIRA, the frequent impact of known hazards heavily influences the final assessment. Formal EOP/IAPs which emerge from this assessment are primarily written to address these routine hazards. In regions where wildfires are frequent, there is a greater risk of flooding. The scorched earth left after the fire, called a burn scar, increases the likelihood of flooding because little vegetation remains to slow or absorb rainwater. An EM professional in the Southwest said this about the increased risk of flooding created by wildfires,

"Well, I think for us, it's, it's both because in 2013, we had well, 2012, we had the [Fire Name] fire. So in 2012-2013, we had that fire, then in 2013, we had large amounts of rain and that caused flooding and then ultimately that flooding was exacerbated by the fact that we had a giant burn scar up in in the mountains. I've lived here and grew up here. And we have, we have fires every year."

The burn scars left on the landscape by wildfires often take years to heal thus exposing the landscape and surrounding population to further damage. The velocity and volume of water flow is increased by the reduced vegetation and the glossy, charred soil left in the burn scar (Fox et al., 2016). Because of this, EMs in regions where wildfires are frequent must now also contend with the greater probability of flooding. This hazard increase is described by one Southwestern EM pro in these words,

"So hopefully within the next few years and even this year, we might see some grasses and stuff start to come up and we didn't like…most of the area doesn't look like just absolutely like glass

you know, or that shine to it. Not only is that [vegetation] not there to stop it, but um so the soil itself is hydrophobic. So it's like that, that charcoal stuff, so it's not gonna hold water and so all the water runs off. Nothing's there to stop it and then it's going to carry debris down with it, which ultimately can lead to like clogged culverts. And, and potentially, that's what results in like the blown out roads, bridges and overtopping of dams."

Even though the risk of wildfires is reduced in areas where the natural fuel is expended, the danger of repeated flooding persists. EMs in wildfire regions juggle preparations for the multi-hazard risk of large fires and post-fire flooding annually.

"So flooding is definitely like the big, a huge issue, but it's especially bad when we've had fires. So 2012 we had a big fire then 2013 we had a big flood. And then 2015 we had another flood that was exacerbated by the burn scar from 2012. And then in 20, yeah, and 2020 we had the [Fire name] fire. So we're, we're in the preparedness for flood…is what we're doing right now. So we're always dealing with it, and we're always preparing."

Recognizing the consistent risk posed by fire and flooding is part of the local OEM THIRA and EOP/IAP. This analysis should also include the further step of identifying those who are most vulnerable but often does not as shown by the responses of EMs in this study. Although some vulnerability assessment may occur, the OEMs in this study do not include local inmate populations.

Manmade hazards are also an issue although they are not as predictable as their natural counterpart (Aguirre et al., 2005). The THIRA provided by EMs in this study do include risks presented by manmade hazards. One EM professional who had been on the job for less than two years commented on the mix of manmade and natural disasters they experienced locally.

"Let's see, I've already had two hurricanes; I've had COVID…let me back up a little bit. Had a tornado, COVID, two hurricanes, ice storm, flooding. Two well, two oil well explosions with one

death. Man, I've had the sewage line broke for the main city and dumped into the creek…into the water supply."

Another EM professional on the Gulf Coast shared a similar experience with a manmade hazard in their area that created a problem as result of the natural hazard.

"We had a very, very bad [chemical] spill the day after the hurricane passed. We had the bio-lab that exploded less than 600 feet away from [named interstate]."

This phenomena of a natural disaster triggering a technological (manmade) disaster is known as a Natech (Gill & Ritchie, 2018). One of the most publicized examples of a Natech disaster was the 2011 Tohoku tsunami and subsequent Fukushima nuclear disaster in Japan. Relatedly, an EM professional in the Southwest identified chemical spills as one of the most likely manmade hazards for their area.

"Wildfires and chemical spills are typically the biggest threat that we have because a lot of our facilities are near train tracks and near well-traveled highways and interstates and intersections. Chemical spills, again, are probably some of our biggest threats."

After experiencing a manmade disaster that garnered federal attention, one EM professional had this to say about how they are trying to gain visibility of the manmade hazards within their THIRA,

"Today just got notified of a, are you familiar with [manufacturer name]? So they have… they are the largest producer of some kind of ammonia for all their freezers. And so they host a drill, disaster drill, every year at their facility, and made me think of it. All those things that people have in their THIRA, the threat and risk analysis, you know, people don't think some of this will happen."

One risk missing from all the THIRA and EOP/IAPs provided by the OEMs in this study is directly related to carceral evacuations. Public safety can be put at risk if an inmate were to escape while being evacuated. This risk was not found in any of the THIRA/HVRA analyzed nor addressed in the EOP/IAPs provided but is a real possibility. For example, one jail commander recounted an incident during a hurricane related jail evacuation where an inmate charged with murder escaped from the bus he was on.

"During Rita, we actually had one guy escape off the buses, and that's why we don't use the school buses anymore. And he was a pre-trail detainee for murder. He jumped off the bus in a very rural northern parish that is nothing but swamps. And he turned himself in about an hour later."

Not only do carceral evacuation transports loaded with inmates pose a threat to the areas they pass through, but also to civilian evacuees during contraflow operations. When asked about the security risk of potential jammed traffic on egress routes, one jail commander described using security escorts as a way to mitigate the public safety risk.

"Okay, well, I mean, all of our buses have police escorts. So we can go around traffic as long as we've got a shoulder."

The need for a police escort underscores the threat to public safety inherent in the mass movement of inmates.

Risk assessment is not unique to the study's EM professionals. Carceral administrators in the interviewed regions are also keenly aware of routine disaster hazards. An interviewee at the state DOC in the Northwest said,

"Wildfires aren't new to us. I actually have a forest camp that I run about 16 [inmate] fire crews out of. So us responding to fires is normal."

The jurisdiction where this interviewee was speaking from did evacuate several prisons because of these fires. In 2019 this same carceral professional participated in an internal disaster exercise that was prompted by a grassfire near one of the prisons. Although it was an exercise, the proximity of a recent real-world grass fire lent credence and urgency to the scenario. A deputy warden on the Gulf Coast described their experience with routine flooding and the resulting jail evacuations this way,

"Just about every year, we have we've had flooding. So in addition to hurricanes, we have a reservoir north of us, which is called [name of reservoir]. And I'm not a fisherman, so but so they operate this reservoir to where it's at like a 26 foot operating level, and then they have floodgates open if it gets significantly higher than that. Well, that shit rolls downhill as they say. And that all comes to our county down the river. And it has flooded out the western side of our county three times. So we've had to evacuate."

The EM and carceral professionals interviewed are well aware of these regular hazards. Although experienced with predictable frequency, EM departments and carceral facilities choose to prepare for these hazards independently.

Training and Exercises

Although they experience the same disasters, disaster training and exercises do not overlap between EM and carceral entities. This is the second category of Theme 1. The codes of EM exercise, Corrections exercise, Corrections training, and Guide Use were employed to tag the quotes of interviewees regarding how they prepare for routine disasters in their region (see Figure 5).

As one would expect, EM professionals in these high frequency disaster zones conduct regular exercises. Although these exercises involve many organizations, both public and private, EM interviewees said they did not include carceral facilities at all and only tangentially included LE

agencies in general. Regarding an annual evacuation exercise conducted in a large, metropolitan county, a Gulf Coast EM said this,

"We didn't really have them [sheriff's office] involved. They are just there to kind of monitor just to understand our operation, but generally they do not actively participate."

The referenced sheriff's office manages the county jail and has had a disaster related inmate evacuation within the last year as well as previous years. They do not conduct an inmate evacuation exercise jointly or even at the same time as the county's evacuation exercise. An EM professional in the Southwest reported a similar experience with their local disaster exercises.

"Obviously, like I said, if we're planning a terrorist event, we're going to be relying a little more heavily on law enforcement than if it's like a severe weather event. Usually, if we can make it [exercise] appealing to them [LE] and sound relevant to their mission, we can get them to play, but it really just depends. If you're only using them, you know, for blocking roads and controlling traffic, it's a little harder to entice them."

No exercises are developed by EM where a carceral disaster evacuation is a goal of, or even mentioned in, the scenario. One EM said this when asked about exercises organized by the OEM to help prepare the jurisdiction's carceral facility for a disaster related evacuation,

"I'm not aware of any scenario that we [OEM] have specifically focused on the jail as a part of. I don't know what the requirements as a correctional facility are for them to get any federal money or anything like that, as far as exercising."

A county EM planner in the Northwest had this to say when asked if his OEM included the sheriff's office, or jail, in annual disaster exercises,

"So they haven't been with too many actual exercises in the county but they have shown up for the real world events that we had."

An EM planner in the Southwest echoed this when asked the same question,

"I don't think it would be...they've never incorporated it [jail evac] within a larger exercise. So if they [sheriff's office] do do it, I think it's it's internal to just the jail group of the sheriff's office. If they do those drills or things, that's a great question, I'm not even sure if they if they do it, or not but as far as evacuations or anything, we do work a lot with that. But when we're working on evacuation, it's related to community, the community evacuation."

A Gulf coast EM planner responded to the same question this way,

"I'm sure they [jail] practice, but that's not part of the county exercise. I don't know how they do that. I'm not sure."

Emergency managers are not unique in seeing jail disaster evacuation exercises as not their purview. Carceral administrators in this study do not look outside their own facility for help in either planning or conducting disaster related evacuation exercises.

Carceral professionals in this study do conduct disaster exercises and training but rarely use the NIC guide or similar documents. Their exercises do not include an OEM in either planning or conducting it. When asked if they had ever been involved in an evacuation exercise with the county's OEM, a warden at a large jail on the Gulf Coast replied that the sheriff's office has a liaison involved but only to support the LE needs of the civilian population and not to coordinate or speak about an evacuation of the jail.

"I have not. We have a full time employee who is assigned to emergency management from the sheriff as a liaison. So he's a lieutenant. He is our contact there."

The emergency coordinator at a state DOC in the Northwest described their disaster exercises as regular events that only occur internally. Moreover, a recent tabletop scenario developed by the

DOC involved the evacuation of one of the state prisons which within a few months of the tabletop had to execute a real world disaster evac.

"Part of our [DOC] emergency management program is that we do quarterly tabletop exercises. And then twice a year we do functional exercises at each facility. Okay, so the DOC had actually done an exercise of evacuating [prison name]. And so that had actually, you know, and that involved [prison name], the transport staff, and the DOC. So they had just recently done that scenario."

One jail warden in the Northwest conducted a partial evacuation exercise long before facing the recent disaster but it did not include the local OEM.

"Years ago, we had a mock staging we tried, where we did a…where we actually brought buses in and loaded some inmates on to see how it would work and that kind of stuff. So we knew it was possible. We did it ourselves."

Not all the carceral facilities interviewed have regular disaster exercises to prepare for their routine hazards. The frequent response to actual disasters has become the de facto exercise.

"Sadly just say we've had enough hurricanes that we really don't need a whole lot of practice."

One jail warden on the Gulf Coast echoed this sentiment when asked why they don't conduct regular disaster drills.

"Pretty much we don't really have to. Yeah, we we've done this so much. We pretty much got it down to a science."

Not only does the disaster tempo in high frequency regions affect the perceived need for regular exercises by carceral administrators, it also has an impact on their staffing. The warden of a large

county jail revealed that keeping his staffing levels where they should be is difficult because employees are expected to stay and work rather than evacuate with their families.

"A lot of people don't want to stay down here anymore, especially knowing our history with hurricanes. It's it's really tough to go through again. So right now, we usually have about 300 staff members, and we're down 70 today, and we haven't hired anybody back."

One Gulf Coast warden drives the jail's readiness training by introducing new jail staff to their internal EOP and what they label a Hurricane Packet on day one. This is in lieu of exercises because new hires will experience the real thing within the next 12 months.

"It's a part of our orientation, the emergency operation plan, and then we have the hurricane packet that they're…all the new staff members sign that outlines the same things I've already mentioned. You know, having a plan for your family; yourself; you know, you're going to be here, make sure your dogs are taken care of; your house is squared away to where you're not gonna have a gas leak or a water leak, you get it all turned off ready to go."

The use of the Hurricane Packet is a guide of sorts. It informs new staff of what is expected of them during the approach of a hurricane and lists personal protective actions to take. However, formal use of a carceral disaster guide like that published by the NIC is minimal. This is especially true of facilities experiencing frequent disasters and seems counter-intuitive. Those who experience disaster more frequently would seemingly have a greater need for a checklist or guide. However, carceral administrators reported that because disaster response occurs so frequently, they rely on the experience of their seasoned staff. A Gulf Coast warden said this when asked how his staff knew what to do for a disaster.

"I would say most of it [guide use] is institutional knowledge."

A parallel sentiment was offered by a warden in the Northwest.

"We do have some checklists on certain emergencies and stuff. And so, we have a little checklist on stuff like that. So we do have written stuff. And I try to…we try to keep as much as we can written, but obviously, some of its institutional knowledge. The National Institute of Corrections, you know, they publish, obviously, a lot of stuff, especially on manuals and stuff for officers. I don't know if we use exactly what they had, but we do use some of it."

One disaster guide was described by a warden as a set of broad general orders intended for shelter-in-place operations but not for an evacuation.

"Basically, in our general orders, it basically says things like you know, 72 hours out from landfall, the generators need to be topped off, the you know, any loose equipment needs to be secured. And then at 48 hours, all staff needs to have reported to the jail at that time. They start securing electronic equipment, bring it upstairs, they go out 24 hours."

This limited use of disaster guides by carceral facilities is in stark contrast to the heavy usage by OEMs. All the EM offices interviewed either had publicly available EOP/IAPs or provided them at the PIs request. While these plans were not equally detailed, they all contained pre-disaster instructions of some kind. This is not surprising given that FEMA's Hazard Mitigation Grant Program (HMGP) requires documentation of planning-related activities to receive funding (FEMA, 2015).

By looking at all the above codes and quotes in this section, Theme 1 emerges clearly. The combination of the above quotes, codes, and categories supports the finding that carceral facilities are not seen as an EM concern. EM and carceral administrators both hold the paradigm that carceral disaster preparations and response is up to the jail or prison to figure out. Because of this, collaboration between the two is limited.

Theme 2 – Parallel but not synchronous collaboration

Parallel collaboration, as defined by Berlin and Carlström (2011), exists when organizations "carry out tasks simultaneously, while acting on their own" (p.162). Carceral tasks in preparation for and response to disaster occur during the same period OEMs are completing theirs. In the case of slow-onset disasters, both organizations are attempting to mitigate the disruption of essential functions caused by the approaching hazard (Fritz, 1961). Although these two entities exist at the same level, be it county or state, they do not engage in synchronous collaboration by exchanging tasks being performed at the same time (Berlin & Carlström, 2011). As with Theme 1, an examination of the codes and categories supporting this theme follows. However, less detail is provided as parts of Theme 1 are tangential to Theme 2 (see Figure 6).

EM decisions		
LE decisions	Decision Making	
Political decisions		
Media issue		
Inmate laborers		**Parallel but not Synchronous Collaboration**
Laundry		
Kitchen	Jail as resource	
Generator Power		
Water		
Collaboration cycle		
Synchronous Col		
Parallel Col	Collaboration w/ EM	
ESF 13 crossover		

Figure 6: Theme 2 – Parallel but not Synchronous Collaboration

Decision Making

Slow-onset hazards allow those in the forecasted impact area more time to make decisions, although the exact path cannot be known with certainty (Lindell et al., 2006). This study reveals that for EM and carceral institutions, the decision about how to best weather the event is made simultaneously yet independently. Each has the same amount of time to decide a course of action but there is little collaborative decision making. Moreover, carceral institutions at every level are

not legally bound to comply with decisions made by OEMs regarding mandatory evacuation orders given for the general populace (Omorogieva, 2018). As a result, they are free to choose whether to evacuate some, all, or none of their inmates. One jail warden on the Gulf described the decision to shelter in place for a manmade hazard although civilians were being evacuated this way,

"So we ended up postponing moving anybody for two days because they [hazard forecasters] just kept studying and then said it's about to go get everybody out of the area. So we thought we have no choice at this point, other than to just, you know, shelter in place and deal with it as we need to."

Closer to hazard onset, this same warden again had a conversation with the Sheriff where the decision was changed to evacuate a portion of the inmates.

"Come Sunday, that all kind of shifted and the sheriff you know, called me into the jail here. And we're sitting here talking and he said, 'I feel like we got to do something.' So that's when we came up with the plan to go ahead and evacuate."

After much media coverage of the impending disaster in this jurisdiction, these words are indicative of disaster related political pressure a sheriff experiences. Like all politicians, the sheriff must be reelected at the end of their term and so must please constituents. Media coverage of mandatory evacuation orders for the public naturally raise concerns about what the jail will do among inmate families and humanitarians. If the sheriff does not address these concerns appropriately, his or her reelection could be in jeopardy (Clarke, 2018; Nicholas, 2019; Shalabi, 2021). Another jail warden on the Gulf facing a separate disaster was asked how their facility made the decision to evacuate. This was the response,

"Well, the, we go to all of them meetings and we listen to their [forecasters] advice. But that's a, that's a call that the sheriff has to make."

The meetings referred to here were at the county level involving politicians and agencies intended to inform decision makers by providing them with the latest updates regarding the approaching hazard. The sentiment expressed in the preceding statement was affirmed in a later interview with a deputy warden in the same jail who said this when asked if any of the EM team worked with them on making the evacuation decision,

"It's just us, the sheriff, the chief, and sometimes my commander."

This is not unique to the Gulf. A jail warden in the Northwest described how the decision was made to either shelter in place or evacuate in the face of an approaching wildfire this way,

"And so every day, I was listening and talking to firefighters to get an understanding of where we really were. Because firefighters, they like overreacting sometimes. And so they'll they will jump to, hey, let's spray water on everything. You know, when you sit there and talk to them, you have a better understanding of like, Okay, I'm not as concerned."

A state prison warden in the Northwest offered this explanation as to why his state's OEM was not involved in the prison's decision to evacuate,

"In a prison setting, you have to make decisions longer…sooner than everybody else. Because when other people are in the Get-ready stage of evacuation, we have to make a decision either to go or stay. Because it takes us longer."

The longer lead time needed to effect a large inmate evacuation was underscored by a county jail warden facing the same disaster.

"You need to be out within the next couple hours. You know, so you have a few hours to get it done. But it's still, when you're talking about a facility the size of about 500 inmates, it's gonna take a while."

The EM professionals interviewed made similar statements regarding who makes the decision to evacuate the jail in their area. One EM coordinator in the Southwest said this,

"So, like on evacuations, the sheriff's office is the one that makes those calls."

Because EM professionals and carceral administrators do not see EM having a role in carceral disaster operations, it is no shock then to discover minimal collaborative decision making.

Jail as resource & Collaboration

Emergency managers in every region of this study use the resources of carceral facilities during the disaster phases, but this help is rarely reciprocated. The statement of a prison warden in the Southwest is a good example of the general sentiment of carceral administrators in this study,

"So we got a lot of resources. A lot of you know, easy labor to get to. A lot of buses and security equipment and lights, generators. And the Department of Corrections has a lot of those kinds of resources that are readily available to dish out. So typically, when we were involved in emergency management, it really wasn't much like what can we do for you, it's what you could do for us."

This warden had a particularly difficult time with a request made to the local OEM for insulated coolers during an extended elevator outage at the prison.

"Hey, can I get some coolers even to book cold sandwiches in? Because I was gonna freeze a bunch of sandwiches, because I didn't have elevators, right so moving food up 13 floors is a challenge. So I was just wanting to freeze some sandwiches, move them up on the floors when my elevators would work, then the elevators shut down. So just a cooler, just some ice chests. Is there some ice chests I can get? Well, [they said] we could ask around and see what we can find. Never, never heard back. Again, very simple kinds of things I haven't had any success with."

A frequently leveraged resource by OEMs is inmate labor. Inmates who have a history of good behavior are used outside the facility. A jail warden on the Gulf coast described the use of their road work inmates during disaster. These inmates are sent out to support county efforts to prepare for flooding and sheltering.

"We have a road gang crew out here. So when the county is needing sandbags, and things like that, we're very involved in all that. We'll also use the road gang to shut up our special needs shelters."

The PI followed this statement with the question, "Instead of you asking the county for help, most of the time, they're asking you for help with sandbags or whatever. Does that sound right?" The warden simply replied,

"That's…yes, it does."

Inmate labor is a valuable commodity and one used by OEMs outside the regions of this study (Purdum & Meyer, 2020). One prison warden in the Northwest also commented on the use of state inmates to fill sandbags and other tasks when needed.

"I actually have a forest camp that I run about 16 fire crews out of so us responding to fires is normal. We actually have put out even a female fire crew. So we get tasked quite often with sandbags for flooding, debris removal, and of course, the fire crews."

A jail commander in a major urban area had this to say about how his inmates were used for disaster support,

"They actually, when we had the river getting close to flooding in downtown [city name], they assisted with filling sandbags and putting sandbags along the dock wall there. They've helped in [city name], when they had, if I remember right, was massive flooding in [city name], and so our

crews actually went out to help get rid of all the trees that come down, and all those kind of

things."

Inmate work crews are an example of the parallel but not synchronous collaboration between EM and carceral entities. They "carry out tasks simultaneously, while acting on their own" (Berlin & Carlström, 2011, p.162). During questioning of carceral professionals about inmate labor during disaster, the conversation turned to the Incident Command System (ICS). The use of inmate fire crews, sandbag teams, and debris clearing units raised questions about how they were absorbed into the ICS for coordination purposes. One jail commander on the Gulf explained the county OEM uses a regular patrol supervisor from the sheriff's office in the ICS as a liaison.

"Our Lieutenant [name] that I talked to you about, he would kind of be the guy and he would be in the room [EOC]. He'd be calling me or one of my lieutenants here [jail]."

This is similar to how the prison inmate fire crews in the Northwest are controlled during wildfires. The prison warden described it this way,

"We have somebody in the emergency control or Emergency Coordination Center and that's the liaison. And that is generally one of the [prison] emergency management coordinators. It couldn't be myself going in there. So I have about 3-4, I got four other coordinators that are trained to be able to do the Emergency Coordination Center role. And they've all gotten quite a bit of time this last year."

Inmate labor resources are also used by OEMs without inmates ever having to leave the security of the jail or prison. Larger carceral facilities typically have inmates meet their internal laundry and kitchen needs using commercial grade appliances. During disaster, OEMs request help from these inmates. One jail commander in the Northwest recounted an instance where first responders requested laundry support.

"Our Land Use and Transportation folks when they're out there, and you know, something critical happens, and you know, they're on a project for two or three days, they'll ask if we can get some of their vests cleaned and stuff like that and we've honored that request."

The kitchen in one large county jail was used to prepare meals for firefighters.

"Meal services are prepared through our kitchen if need be. For for people stuck on the front lines, for example, fighting fires, and we need to get meals prepared."

In addition to inmate labor, the equipment owned by carceral facilities is used by OEMs for disaster support as well. The most frequently requested asset by OEMs are generators although freezers, lights, and mobile water tanks are also asked for. A warden at one of the large jails in the study was asked for help related to the county's COVID response using the jail's equipment.

"I got a call from our public health [office]. On the one day, when it first hit hard in [named county], the power was out but we still had power because of our generators. They had called us because their power went out at their public health buildings and all their COVID vaccines, the fridge went out, and once it gets to a certain temperature, they're no good. So myself and another Lieutenant, we went over, ran over there and grabbed all, got all their stuff and brought it back to the jail. And so we're able to keep all their their vaccines alive."

One of the prisons interviewed in the Northwest has an agreement with the local power company which allowed them to help relieve the burden on the electric grid during a recent disaster.

"During the ice storm that we had here over the winter, then see they diverted our power for that and then we went to generator power. So that's an agreement we have with the local power company. We get a reduced rate so that when they need our power, we can we can shut down and operate on our own."

One prison warden gave up the facilities mobile potable water containers for disaster relief.

"We got water buffaloes, you know, we typically have 500 to 1000-gallon water buffalos, several in each facility. So really potable water containers were a big part of that emergency."

As part of the state's EOP, the Texas Department of Criminal Justice, equivalent to the DOC in other states, is required to provide mass care resources in the form of sheets, blankets, food, etc. when needed for disaster relief (Kidd, 2020). This is indicative of carceral facilities used as a disaster resource by many jurisdictions. The resources provided by carceral facilities supporting disaster relief, labor, energy, water, food, and equipment, are a collaboration but one that only occurs in parallel with the tasks of other disaster related groups.

One task connecting carceral disaster operations with EM goals is FEMA's Emergency Support Function (ESF) 13: Public safety and security (FEMA, 2016). At the federal level, the primary agency for ESF 13 is the Department of Justice (DOJ). Locally, this function is assigned to the sheriff and municipal police. Because the sheriff's office controls the county jail, when deputies are needed for ESF 13 tasks there is an impact on carceral facilities. The Sheriff's attention is divided between public safety and carceral obligations. For example, Gulf Coast interviewees commented on security needs for civilian and inmate evacuees during hurricanes. One EM professional discussed security at evacuation points specifically.

"We have the sheriff's office or [named city] police department. They're at the county pickup point. They will provide, you know, security for the general population to make sure that those those individuals stay within their designated area at the pickup point."

A jail commander had this to say about carceral security concerns during an inmate evacuation,

"We designed chains to go into the school buses. We had chains that run underneath school bus seats, they hook all the inmates together. You know, even with that we still had one escape during that evacuation."

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Although FEMA's ESF 13 does not specifically name inmate evacuations as a public safety concern, it is clear that inmates who escape during evacuation do pose a threat to the area. This is true for the impacted region and the jurisdictions inmates pass through on their way to host facilities outside the hazard area.

Theme 3 – Interoperability

When hazards present an exceptionally high risk to carceral facilities, the decision to evacuate is made. This decision must be made early as moving large numbers of inmates securely is a lengthy process. The impacted institution must initiate the process while host institutions prepare to receive displaced inmates. Evacuating inmates is a complex process and interoperability problems complicate it. Findings surrounding interoperability were placed in three categories, Evacuee Tracking, Tech Usage, and Transportation (see Figure 7).

Civilian tracking		
Inmate tracking		
Manifest	Evacuee tracking	
NMETS - FEMA		
Emtrack - Juvare		
JMS		
WebEOC awareness	Tech Usage	
Virtual meetings		**Interoperability**
Impacted transport		
Host transport		
DOC transport		
3rd Party Transport	Transportation	
Sec Escort		
Staggered arrive/depart		
En Masse arrive/depart		

Figure 7: Theme 3 - Interoperability

Evacuee tracking

The mass evacuation of inmates shares similarities with that of the general population. One of the most important among these is the need for tracking evacuees. Knowing who is being evacuated when and to where is essential to managing sustainable services to evacuees and anticipating their return (FEMA, 2019). The disaster tempo in the sampled regions reveals EM professionals are forced to conduct evacuations so often that they become routine. However, who oversees tracking evacuees and methods used varies. For example, states on the Gulf Coast assign different departments with managing mass evacuations. One state uses its Department of Children and Family Services (DCFS) to select tracking software and oversee its use.

"So we actually partner with DCFS, Department of Children and Family Services, they manage the [named software] platform. Even though they're a state agency, even when we have a local event, they respond and are integrated into our county pickup point."

Its neighboring state assigns this duty to the Military Department (National Guard).

"Objective 1: Coordinate Mass Care Resources. Provide trained personnel to support the state's tracking Emergency Tracking Network (ETN) system" (Kidd, 2020, p.32).

Although it is available to them for free, none of the states interviewed use FEMA's National Mass Evacuation Tracking System (NMETS) (FEMA, 2019). Each used custom software designed for them alone.

Although departments charged with managing the general evacuee tracking differs, states are consistent in their use of barcoded banding technology. Barcoded wrist bands covered by a plastic sheath are used by the DCFS to automate the tracking process.

"Using the [named software] tracking system…they use a banding system. And it integrates with a computer so that they can input this person's data when they do check in and give a band that has a barcode on it. They put them on the bus, whenever they get to their destination, they scan

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the barcode, and it tells them where this individual is. So that we essentially have tracking

throughout the evacuation process."

This process is duplicated by the National Guard in a separate venue.

"As the registration process continues, guardsmen place a wristband on each evacuee. Each

wristband has a unique identification number which is recorded into the [named software] system

along with the evacuee's information."

Using barcoded bands allows disaster professionals to track evacuees, their pets, luggage, and
durable medical equipment (FEMA, 2019).

Tracking evacuated inmates is less developed. Several carceral facilities in this study do use a
wrist banding system for inmate identification but it is not barcoded. Bands display the inmate's
name and photo and are used internally for guards from different shifts to identify inmates
moving between areas.

"We print the photo and information out and we put them in the wristband and we have a

laminator that we run the wristband through and it makes it kind of durable plastic. We like to

make a joke with the offenders sometimes. It's like a fair; you go to the fair, you get your

wristband, you can ride all the rides. Yeah. Some laugh, some don't like it. I can't physically track

it [wrist band] from a computer. But when I go out to do a count, or to find a particular offender,

I'll say 'show me your ID' and if his ID matches his face, then that's him."

Because barcodes are not used, disaster impacted carceral facilities use a printed or handwritten
manifest to keep track of which inmates board which bus. One carceral facility evacuated over
1,000 inmates and had this to say about their tracking system.

"It was just a printout of the housing units. So it was not electronic, per se, it was just, hey, here

we go."

One jail commander on the Gulf described tracking their 1200+ evacuated inmates this way.

"What I was not prepared for was how to record where they went. So real quickly, we just kind of wrote down where they went. Then we had another assistant warden that was standing by each bus and he was checking to make sure we got every inmate on the bus, checking off names and then given him the go ahead to take off."

Another large jail on the Gulf followed a similar process when evacuating their inmates to a sister county.

"They have a separate jail management system. So, what we did was they stayed booked and under our system here. And we went old school with logbooks and the deputies started their logs as soon as they left here and basically did it old school, write the time, the date, the time, whatever the entry is, and the deputy signed it on every line."

Carceral administrators using a handwritten or even printed manifest for evacuating inmates spoke about the accountability problems this created. Not only was creating an accurate manifest difficult when leaving the impacted institution, achieving accountability on the receiving end was just as daunting. Below is a narrative from one jail commander that helps to capture just how chaotic the inmate tracking process was for their facility.

"They put them on buses, my people wrote down where they went. Well the problem is, the people on the buses didn't know where they were bringing them. The only thing they told them was "Hey, we're from [named jail]." So my people wrote down that 150 inmates were going to [named jail]. And so they said, 'hey, you're going to [named jail].' So they wrote it down, they [impacted deputies] kept good records. Problem is they [inmates] weren't going to [named jail]. They were going to other facilities all over the state. And so three of them…300 of my inmates went over the course of probably six hours. And I didn't know where they were. And we couldn't get anybody to tell us where they were. So we had to start calling around and finding our inmates. And even

*when we we did have the correct place that that bus was going, somehow on their course to the facility the facility called and said 'hey, we're not taking them anymore.' And on the road, they had to find a new place to go. So we we had a group that was supposed to be at facility X. And so when we called over there, they say 'No, we didn't take those.' I found out that they had been rerouted to facility Y. **It took me three days to track all my inmates down.** But that was the, that was just the beginning of the nightmare, because then the places [host institutions] started moving my inmates around without telling me. Warden [name] in [another impacted county] called and says 'hey, you know where my inmates are?' I said nope, because I don't know where mine are either."*

The lack of a standard automated evacuee tracking system further complicates keeping accurate records even after the initial evacuation is over.

"It's kind of funny. [named state] has, okay, so they'll have a county jail. But the county won't run it, they they contracted out, or they sold the building to a private company called [named company]. In one case, they they have a facility next to a county jail. And then they kind of coordinate with each other to see which inmates they're going to keep. And and so they started moving people within their system. And they didn't tell us and so we continue to go through this 'where are my inmates at?' They also sent people to the state and sometimes would tell us sometimes would not."

The introduction of a private correctional facility as a host institution was unexpected. Several smaller, more rural, counties in this state contract with a private company to be their primary county jail. The need to find available beds for inmate evacuees was great and these private jails agreed to be hosts.

Once the evacuated inmates were settled in host institutions days after impact, the lack of an adequate tracking system continued to be problematic. Inmate movement and release done by host facilities were not reported to the impacted (home) facility.

"So when I finally got my staff back, my staff started doing audits. And to this day, my staff will still do an audit at least once a week to find inmates, like we we may be two or three days behind them. One of the big problems is, is when they [inmates] show up to the facility [impacted jail] to get their property, and we didn't know they had been released. And we've had to take people back into custody. I think it was [named county] released someone with an attempted second degree murder, and had a $1.5 million bond. And they happen to be serving state time also. Well the state released them, they just let them go. And so it took us a while to track that person down."

Because county jails are independent of each other, maintaining inmate accountability during movement is difficult.

Inmate evacuee tracking is also a problem at the state level. Prisons within a single state use the same system and yet still have trouble maintaining accountability of evacuated inmates. A warden at one host prison had this to say about the mass arrival of inmates at his facility from three impacted prisons,

"They kept it [arriving inmates] by [housing] unit over there to kind of organize how they were coming. But yeah, we went about, probably about 28 hours without an actual clear count."

The root obstacle to adequate inmate tracking during evacuations is interoperable technology.

Tech Usage

Jail management systems (JMS) in carceral facilities are not interoperable. This is especially true at the county level where each jail is free to choose which JMS to use. Without exception, the jail

commanders interviewed acknowledged that JMS are not the same between counties. From the Northwest, one jail commander described the region's various systems in these words,

"There's a whole lot of off the shelf programs out there. And each agency picks which one they think is going to work best for them. Ours actually, that we utilize right now, is developed in house by a programmer that we had that was a former corrections deputy, and then went into the computer world and developed our current inmate management system. Or I should say, a part of our inmate management system. We do have a legacy system, which is separate, was actually here before I got here. And that's what they call a Sheriff Sworn Inmate System. We refer to it as SSwIS. But in short, I don't think any of us share any kind of a similar system unfortunately."

A Gulf Coast commander had this to say about sending data to the host jail that was receiving his evacuated inmates.

"They [host jail] have a separate jail management system. So what we did was they [inmate evacuees] stayed booked and and under our system here. We didn't want to depend on someone else's computer system. Obviously, we don't even know how to work their system."

Another commander from an impacted jail on the Gulf Coast expressed frustration with the lack of interoperable JMS this way,

"There are some jails that don't even have jail management systems. They have a filing cabinet with files in them. It's very interesting [said with sarcasm] and the state system is: Oh, they [county jail] just got mandated by an auditor that they had to update this system, because they're still using a system that has green screens from the 1980s and isn't a very good inmate tracking system. There's a lot of places like that. It's, it's crazy to me that it's still like that some places."

A host jail commander in the Northwest echoed this when asked if they expected to receive electronic information about evacuated inmates from the impact jail by simply saying,

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"*I don't think there is a way for the jail management systems to talk.*"

There have been attempts to standardize county JMS but these fell apart because the software was not kept current.

"*Back in 2003 [name county] spearheaded this thing called ARMS. It was free. You could change your, your operating system to ARMS, which was a automated, I forget what it stands for but it's basically a jail management system. They give it to you for free. Tons of jails in [named state] went to it. We went to it. We had it. We loved it. Then it's…basically it never progressed. You'd have to buy updates to it. [Named county] still uses it but I think the rest of the state has moved on. We moved on in like 2010 from it.*"

Another attempt was made to standardize county JMS after ARMS was abandoned.

"*So [names six counties] we all have New World Systems now. So New World Systems used to be its own company but now it's a product that Tyler Group sells. And so they do communications, they do CAD [computer aided dispatch], they do criminal records, and they do corrections. But so we all have it but we don't…we're not all one. We're not all on the same release.*"

Not having the same version of software prevents neighboring counties, and even facilities in the same jurisdiction, from sharing data contained within their JMS. One jail commander interviewed said the sheriff's office runs two jails in separate buildings and both were evacuating at the same time. However, because their JMS were not interoperable, files had to be transferred by hand.

"*I took my files I was, I was walking across [the street] to the, to the sheriff's prison, because they couldn't understand my paperwork, which I'm still frustrated about that because my paperwork was clear. And they were trying to get medical files together, they, you know, they had to get medical files. And so I went to walk across to help.*"

Prisons within a state fare better because they use the same computer system. Although there was no electronic transfer of data during the evacuation, once an accurate count was achieved in the days following the debarkation disorder at the host facility, inmates were moved in the JMS from one prison to the other.

"We actually, we actually did a complete move. So it was, you know, they went from [impacted prison] cell one to [host prison] cell three. It tied everything together. And even the ones in [host prison], where they went to a basketball court, we created a basketball court bunk to be able to document that movement."

Not having an interoperable JMS was only one tech hurdle carceral facilities have to overcome during disasters. Another was being aware of and leveraging the WebEOC software used by the EM professionals in their jurisdictions. WebEOC is the de facto national web-based emergency operations center software because it is used and distributed by FEMA.

"FEMA provided every state/territory with FEMA WebEOC user accounts in order for users to submit their resource requests directly to FEMA. If the state/territory chooses not to submit resource requests directly through FEMA's WebEOC system, a FEMA employee will enter the request into FEMA's WebEOC. FEMA will continue to implement policies, procedures, and improvements to WebEOC, as necessary, to reflect technological improvements, operational necessities, and lessons learned from response operations. However, FEMA is confident that the improvements referenced in this report should satisfy fully the requirements in House Report 114-668 to implement policies, procedures, and activities necessary to improve interconnectedness with state EOCs" (FEMA, 2018b, p. ii).

The WebEOC software is created, sold, and maintained by Juvare (Juvare, 2021b). State and local OEMs across the U.S. use WebEOC to achieve situational awareness and handle resource

requests. Regarding transportation assets needed for evacuation of the general population, one county EM coordinator described the WebEOC request process this way,

"It's the state's buses. We have to use the state's buses. We have to do a request to [named state department] and request these buses through the state and they'll send us the buses that we need to get the people out. It's called a WebEOC request and that's the proper way to do it."

An EM in a neighboring county to the one above echoed this statement.

"We got a deal, it's called WebEOC, which goes straight up to [state capital]. Basically, uploading the requests for what assistance that's needed within the county. You know I am by myself. So right when a disaster is declared if I need help, I use the sheriff's office as some of my resources, you know, taking care of these things. I'm also bringing in a couple of personnel to help out with WebEOC requests. Because I have a bunch of it flowing in from the county. It's…everything's ran off of WebEOC."

At the state OEM level, the numbers of those who have access to WebEOC can be large and not all have the same level of access. A state EOC manager had this to say about WebEOC access in the state,

"State and Federal partners (liaisons), local and county EMs, some private entities [have access]. We have probably 2,000 people in WebEOC. I don't think we have can have too many. It is about processes and as long as those are defined, we're good. Since we have one instance of WebEOC, we can see everything in there. But we encourage locals to push incidents up to the State only as necessary."

In spite of its importance in requesting support, few carceral administrators have access to WebEOC or are even aware of its existence. When asked if county jail commanders could be given WebEOC access, one state OEM administrator on the Gulf Coast said this,

"You are correct that county jails don't have direct access to WebEOC. All requests for assistance to the state have to be made by the county OEM, either the director or a designated staff member there. Each sheriff's office should have a representative in the county EOC who can relay those needs to the county OEM director. He or she can then put that request in WebEOC if needed."

A state DOC administrator in the Southwest said he is one of only three people in the state's DOC to have a WebEOC login. Moreover, he was not aware that WebEOC is used nationally.

"I didn't understand that It was nationwide I guess. I didn't understand that it was provided, you know, outside of [state]. In the agency, only three people that I'm aware of have a logon. And so there's a, there's a representative in the director's office, which is in the job that I used to have and then myself and [name]."

One jail commander in a small county is fortunate because the OEM consists of one person who is also a deputy sheriff. Although the commander is unfamiliar with the specifics of WebEOC, the jail has easy access to disaster resources because of the embedded WebEOC account holder.

"Our EOC, our guy works right here. He actually works within our sheriff's office. He's an employee with sheriff's office. He represents our department. We ran out of water, it took about two days for them guys [DOC] to actually get their team ready to come get them [inmates] so what we had to do in the meanwhile was go through EOC. They was able to get us a generator to run our building and our jail because we're one centralized location. The one attached to the building the county takes care of and maintains that. The one we got from WebEOC the National Guard Army Corps of Engineers handled that one."

Having limited or no access to WebEOC is not the only tech hurdle carceral facilities have to overcome. When inmates are evacuated from the impacted jurisdiction, they are physically

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separated from legal counsel and the court. This makes adjudication difficult. An impacted jail commander described how they tried to overcome this problem this way,

"So a lot of these facilities are set up for Zoom. But a lot of them are what I would call rural counties. They don't have broadband. And that's a problem. So we have to move them [inmates] to a site where they can actually get on Zoom. But we have a transportation department that's…they're bringing inmates places every day and they're picking up inmates every day."

Coordinating the movement of inmates to Zoom capable facilities from a remote location is a challenge. Inmate visits with attorneys can be conducted via phone which is much easier for rural facilities to accommodate. Court appearances, however, are not done via phone. Either inmates are transported back to the impacted jurisdiction, sometimes hours away, or a virtual appearance is used. Although virtual court appearances are not ideal, one of the jail commanders commented on the resulting improvement in judge-to-inmate interaction.

"You know, I had inmates in their housing unit zooming with the judges, and they didn't even know if it was legal at the time. We had no, no, what you call it…guidance from from the courts or legal opinions in [state]. They ended up having to go to the [state] Supreme Court and see if we could actually sentence someone by zoom for a felony. And we can. We've got, I've had people get a life sentence over zoom and it's interesting because the dynamic between the judges and the inmates change. When it's in the courtroom, you know, they [inmates] sit by their attorney, and then they don't say anything. On zoom, they don't have their attorneys, they just sit in one of the boxes so they speak up more, and the judge has more interaction with them."

The technological problems surrounding inmate evacuations are a not easy to overcome. Further complications are injected into the process by transportation challenges. Evacuating inmates is not as simple as just loading them on buses.

Transportation

Interoperability of transportation assets is common and expected in EM. Emergency managers affected by routine, slow-onset hazards, are used to having public or other agency transportation assets at their disposal. For example, one OEM on the Gulf Coast uses city transit, school buses, and National Guard vehicles for moving those who lack adequate transport.

"We pre-plan and we pre-stage equipment every year for our critical transportation need population. Any transportation that is done internally within the county is done by either our paratransit, [named city] city transit, which they, they usually take the bulk of it. We'll bring in our school board, they'll have their drivers, if they don't, then we bring in the national guard to assist."

Coordinating the transportation of inmates for a mass evacuation under the pressure of a hazard impact timeline is more challenging. Carceral facilities are used to securely transporting small numbers of inmates during non-disaster periods for court appearances, work details, or housing transfers. However, moving them en masse during an evacuation is more difficult because of security concerns. Keeping inmates securely contained within vehicles and along the egress route requires not only more vehicles, but also more persons than can typically be supplied by the impacted facility.

"Our original plan was we have an agreement with the school board to use school buses. So like, basically, if we're evacuating the jail, the school board would give us enough buses. We would provide the armed deputies and escort vehicles to get them wherever they need to go. What we ended up doing was [host county] wanted to help with the transport so they sent their secure buses and vans down and we used ours as well. And we ended up doing it all on between [host county's] secure buses and ours."

A similar arrangement was made by another jail.

"So [named mass transit] does, you know, our public transportation here in the region. And obviously, they have a lot of buses. And so we had worked with them before on mutual agreements, to which they would drive the buses over here. We secured inmates onto their buses, the agreement is all adults in custody, the AICs as we call them, would be secure. And we have armed officers, deputies on the buses to ensure the safety of the drivers."

The embarkation and debarkation of inmates creates its own problems. These events are planned to be staggered. This is intended to allow time for staff to account for inmates as they leave each bus and move into the host facility.

"That was my original plan was to do it in stages with the school buses. We were going to send two buses at a time with three chase vehicles and four deputies on board. So that was the plan. The staff that was over in [named county] would be able to get them in and get them secured and set up with their bedding and all that stuff. And give them a little break, get that done before the next group showed up. But that's not what happened."

The buses for this jail evacuation loaded, moved, and disembarked all at the same time which created a bottleneck at the host facility. Moreover, mass departures and arrivals were a contributing variable to the loss of accurate inmate counts pointed out earlier.

A separate, and much larger, jail evacuation had similar problems. In this case there were more inmates needing to be moved than could be housed at any one facility in the state. As a result, 23 separate counties were used to transport, secure, and board inmate evacuees.

"Twenty-three different facilities showed up. So basically, what they did is they [sheriff's office] put out a broadcast to the state through the DOC channels, through the Sheriffs Association with contacts and said, 'Hey [impacted jail] needs inmates picked up, and picked up now.' Before I was off the phone, just writing down who was coming to get how many, they were already sitting outside with their buses and their vans waiting. They showed up before we were ready."

State prison systems fare better during an evacuation because they use secure transport vehicles from all prisons across the state.

"We have put together our transport unit, I have four locations, I have transport units in [four named prisons]. And so gathering all my transport staff together, I can move around 450 at a time. So we do have that plan in place and we had to activate that plan during this evacuation. These are DOC staff members. And they actually have special state police status because of their role in transporting, so it really, really helps us to have that capacity to have the vehicles and got like 67 transport staff across the state that I can call on."

However, state prisons encountered problems similar to the county jails because the large numbers of inmates required transportation assets beyond what was available internally. This created security problems and an entry bottleneck at the host prison.

"My transport unit couldn't move them all. So we actually enlisted school bus drivers to come in and assist. And then the local parole officers actually were armed escorts on the bus for those. But yeah, definitely something that we had not practiced. The school bus drivers wanted to go over in a caravan fashion which ended up presenting a problem. I had 11, I think 11 school buses that all caravanned over at one time. It was probably great for the drivers. It was not so great on the receiving side when you have 11 buses sitting there wanting to come in."

Deciding which inmates should be in what evac vehicle going to which host institution is a difficulty faced by carceral administrators. Inmates not allowed to cohabitate were not allowed to be in the same evac vehicle.

"What we do is we move them by housing area. And those housing people in that housing unit could be together. And having those quick looks at who to keep separate, we can move multiple housing areas, and we know who is kept separate and where."

This also means inmates need to be kept separate at the host facility or sent to a separate facility altogether.

"So they handled us...the calls came in I get a I get a text message or a call from them and say, 'Hey, [one named host jail] is just taking 70. That wasn't the problem. The problem was figuring out which 70 are they taking."

Political posturing for control during this process is common, especially between counties who have a peer-to-peer relationship. The county-to-state relationship is less tense.

"Once [host county] agreed to let us move there, they wanted to start having a say so about how the inmates were transported. And it really kind of threw a monkey wrench into our plan. And it took much longer to happen. Because the sheriff of [host county] wanted to have say so in how it was done. So with a with a DOC situation, they're not gonna care how the inmates are transported, they're just going to house them once they get there. So we just discovered that that's an issue. Our sheriff's authority ends at our county line. And we weren't really thinking that way.

The haste with which inmates have to be evacuated before hazard onset precludes adequate planning for emergency respite sites. FEMA (2019) defines emergency respite sites as "a location along an evacuation route that can support transportation-assisted evacuees and self-evacuees. Respite sites may include fuel stations, restroom facilities, and access to water" (p.9). Unlike the evacuation of a general population, inmates cannot simply get off the bus at a rest stop. Risk of escape and other security issues is simply too high.

"So if they were general population status, then they usually...they're interacting with people anyway. And so then the ones that you have to worry about then are your segregation status people that may have some conflicts. And so then those were the ones that we kept a closer eye on."

Indeed, an example of this was experienced in one jurisdiction while evacuating female inmates to a host institution 120 miles away. Wilson (2020) reported what was said by a female inmate speaking through her attorney,

"Everyone was told by the officers to go to the bathroom in their pants. Women were peeing in cups and throwing tampons and feces out the windows of the bus, because they could not leave the bus to use the bathroom."

One jail commander had an inmate fight and injury to deal with during the evacuation which was complicated by limited access to healthcare in the impact area.

"One of the [evacuated] females hit another inmate in the jaw and broke her jaw socket. There were no hospitals nearby that would take her. We...for probably about two or three hours I called around trying to find a hospital that we could take this person to and finally someone here in [named city] talked one of the hospitals into let us bring em in, as they were shut down and let them try to, to do something with this person. Once I got a hold of a judge, we got that person released. But it was not, it was not fun."

Securing inmates during the transport involved more than simply putting guards on the busses and assigning police escort vehicles. Physical restraints limiting movement of the hands and feet are needed and in much greater quantities than routine activities require. Hard restraints like metal handcuffs, ankle binders, and chains, are preferred by carceral staff to plastic locking strips (zip ties). Carceral administrators who have a recurring need for evacuations discovered zip ties, although cheaper, are a security risk.

"We have the ability for our normal transport process to do three chains. So put three on each chain. So three individuals together at a time. That's normally how we move everybody. And we do have actually a large supply of those. The sections the inmates are sitting in are caged off and their, their shackles are actually clipped into the floor and locked, so they really can't get up.

During [Hurricane] Rita they were wearing a flex cuff that if you hit it hard on your leg, you can break it open. So after Rita we bought enough handcuffs and shackles to where we could put hard restraints on every inmate."

If the impacted facility does not have enough hard restraints for their inmate population, the host facility can help by providing theirs.

"We sent DOC prison buses to [named county] for their evac. It took just a couple prison buses and we brought shackles for inmate restraints."

and

"Yeah, we wouldn't normally carry that many hard shackles. We have like 250 here so we were close. But between the two agencies [impact and host] we did."

The construction of self-made hard restraints for use on school buses is one technique institutions use to overcome shackle shortages.

"Gustav was the one time all 13 coastal counties were under mandatory evacuation at once. It was the largest evacuation in our state's history. And every county jail in that zone had to be evacuated. So the state could not come and help. We were on our own. So we ran chains underneath school bus seats, they hook all the inmates together."

Another technique employed was to modify individual sets of handcuffs used by road deputies and municipal police.

"We actually build them [restraints] on site to basically, yeah, take a section of chain, and then remove handcuffs from regular handcuffs and then re-mount them on a longer chain."

The relatively low-tech nature of restraints and transport vehicles makes this type of equipment interoperability easier to achieve. Much harder, and not yet unachieved, is the sharing of digital inmate information and tracking.

Theme 4– Successful end-state

The outcomes of carceral response to slow-onset disaster are as varied as the jurisdictions they impact. The PI asked each interviewed carceral administrator how they determine what is a successful disaster end-state for either shelter in place or evacuation operations. The range of metrics described by carceral executives to gauge success is broad but there were consistent replies. These responses were coded and place into five groups (see Figure 8). Collectively, these categories illuminate the paradigm from which wardens and jail commanders view a successful end state post-impact.

Inmate Sec Staff Sec Public Safety	Security	
Jail construction Supplies Generators Staffing Plumbing (Valves & Hookups)	Shelter in place	
Food Water Medicine Bed space No deaths Access to legal COVID impact Staffing	Wraparound	**Successful end-state**
House outside inmates FEMA reimbursement Earmarked Taxes Contract/MAA Jail products Grant potential	Funding	
Internal AAR External AAR Disaster Frequency Region difference	Isomorphic Learning	

Figure 8: Theme 4 –Successful end-state

Security

One of the first elements carceral administers describe for a successful disaster outcome is

security. When probing whose security they were referring to, the consistent response from

administrators was inmates, staff, and the public. These three populations were on the minds of

commanders before, during, and after hazard impact.

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"You know, maintaining care, custody and control of everybody that's being transported is success to me. As long as we get everybody out of here safely in a timely manner, and they're safe in another county, and all our deputies get back safe, that's that's a successful hurricane situation."

Beyond keeping inmates secure during evacuation transport, their security at the host facility is also a concern. Adding inmate headcount to crowded jails or prisons raises the likelihood of inmate-on-inmate violence and attacks on staff.

"The concern with that sort of infighting was more about when they all got to the [named prison], and less about during transportation."

Indeed, forcibly adding inmates to a facility beyond it's designed capacity required putting them in non-cell spaces. This creates a security concern for all.

"So when we got there, there wasn't enough space for our inmates or deputies. And so we had inmates in the industrial laundry room, we had inmates in their gym, we had inmates in their old records rooms. And of course, deputies didn't have, there was no way to actually watch them safely. It turned into a nightmare."

Keeping inmates with persons they are familiar with is a tactic carceral staff use to lower conflict probabilities. Patterns of interaction are already established during time spent in the impacted institution so keeping that routine at the host facility, as much as possible, reduces the likelihood of misconduct.

"So we evacuate people per pod, each pod has about 24-26 people. So they stay together and they're not going to be around anybody they're not normally around."

Efforts to keep routines intact included trying to replicate one institution inside another.

"We wanted to try to keep the two uh the three institutions separated at first, so that we could still identify for count purposes. So our, our logic was thinking, basically, how can we take that institution and lift it up and set it inside the [named prison]. So all the people that live there, putting them all together, so it was almost like operating the facility inside [named prison]. So we identified three areas on our yard, our yard's big enough to where we could separate it off into three sections, and safely put them."

Shelter in place

Carceral administrators default to shelter-in-place as the preferred option for disaster response whenever possible. Indeed, sheltering in place reduces most security concerns, is cheaper, and requires less planning.

"So I think most people will try to avoid it [evacuation] at all costs, and just trying to hunker down where they're at, you know."

According to the interviewed carceral administrators, the decision to shelter in place during hazard impact is based on several variables. One of these is the construction of the buildings used to house inmates. Construction materials and property layout influence the decision of whether to stay or to go depending on the anticipated hazard. For example, jails and prisons along the Gulf Coast experience frequent hurricanes so have adopted construction methods to mitigate the risk.

"The jail is built to shelter in place up to a Cat 4 hurricane. It is a fortress."

However, facility expansions may not be equally hardened, although the preference is to still shelter in place when possible.

"So our, our, this jail is rated for category three and the prison is rated for category three, but we have sections at the back of it, they're more lower rated. The women's facility we have back

there, where we keep about 100 women, is only rated for a one. And then we have two other areas

that are also rated for one. So initially, we were only evacuating those areas."

A building's plumbing also plays a key role in institutions exposed to regular storm surge and flooding. As we saw in the Orleans Parish Prison during Katrina, sewage back up created unsafe living conditions. One jail on the Gulf Coast prepared for this by installing reverse flow valves in the main sewage pipes. This prevents water in the city's system from backing up into the jail. Additionally, hose connections compatible with local fire equipment were mounted outside the building to allow water to be pumped in from tankers. Although there was no water available for the rest of the community through usual supply lines, the jail was able to operate at a subsistence level for several days after impact.

"We had fire trucks that would hook up to our building and they was able to furnish us with

enough water so these inmates could use the restroom and you know, take showers and stuff like

that for two days. We have, uh, I guess it's a intake and an outlet for our jail here. So if we need

to, uh, like get get stuff… Say we have something just clogged up our piping or we need to clean

out something or do something for the state or whatever, we can pump water in and we can we

can pump that, we can pump water out. I don't know who came up with that. It was way before

my time but it helped us tremendously. We shut, we shut off the valves to the city water so we

wouldn't be back-feeding. So we were able to sustain enough water to flush and and give them

showers. Now it's non-potable water so you can you can flush, wash your hands, things like that,

but you can't, you can't ingest it because it's just non-potable water."

In the Northwest, wildfires and extreme winter weather are routine hazards shaping carceral construction. Three prisons were evacuated in 2020 because of wildfires and one of the places chosen to host inmate evacuees was picked because of its construction.

"So this decision was made, we moved them all into the State Penitentiary. The State Penitentiary actually has a wall. And so from a fire standpoint, we had some protection there. From an air quality standpoint, we really weren't gaining anything. And so the first three [prisons] stayed in [named host prison], but just moved inside the wall, versus having a fence where the fire could go through very quickly and easily."

Another variable carceral executives in the interviewed regions consider is staffing availability. If the decision is made to shelter-in-place, security issues are lessened but additional staff are required. Inmates are kept locked in their cells throughout the duration of hazard impact which means trustees are unavailable for routine duties. One jail that decided to shelter in place described the process this way:

"Okay, what we do is we double up the shifts, they're here [staff]. What we do is we put all the inmates in their cells and we secure em in case of you know lights going out or anything. We have all of our manual locks; we make sure they work but we lock our inmates down for their, for their safety too. And we just, again, we just shelter in place."

Extra staff are needed because secured inmates are not allowed to assist with meal delivery and other essential daily tasks.

"We have trays and we have a food cart and we walked down the middle of the cell block and we pass out trays and they would eat in their cell and they would get their juice or or milk or whatever and then they would we would walk back through and get our trays back and so forth."

Ensuring staff are present for duty during evacuation and shelter in place scenarios requires setting this job expectation early. Because carceral staff reside within the impact area, they are exposed to the same hazards as others. This means they must have a disaster plan for their own families before attending to the needs of inmates. One jail on the Gulf Coast uses the Hurricane

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Packet for new employees to help them prepare. This increases the probability of their being able to report to and stay at work during the disaster and its aftermath.

"It's tough on someone who does…that's not a pretty disciplined person to stay here and be away from your family. We make everybody sign what we call a Hurricane Packet. It basically says you have a plan for your family, where they're going to evacuate to, you have emergency contact numbers, but <u>you will be here</u> [underlined to show emphasis] and for the duration of the storm until you're released by the sheriff."

Other regions have similar expectations of duty-before-self for carceral staff, though without the same emphasis.

"So for us, for the most part, you know, there's kind of an expectation in law enforcement that you know, the staff's going to show up. You understand that there are some cases where that just may not happen. And we did have people, because there was a lot of our own people here that were affected. In fact, I was one of them. My house, I was evacuated from my house and I slept in my office here [jail] for about a week. So it happens. And there was some people that their house was almost burned down and so we totally understood that, but there was also, there were also…we had other people who weren't affected, and they stepped up and came in and worked extra shifts."

One commander made shifts mandatory prior to impact then used the jail as a sort of base camp for staff to live and work out of until routine life resumed.

"Once the storm was coming through, what we did was we made it, it was mandatory that the shifts that was working the night of the storm, both the day shift and the night shift, they was, they stayed here at the office. They brought clothes and stuff and they and they worked. They stayed on the premises. But yeah, a lot of deputies had damages to their home. But it's just part of the job. I spent two weeks, because we're such a small department, I spent two weeks staying, actually

sleeping, in my office and stuff like that. I didn't go home for two weeks. Because like I said, as a county whole, we was out of water and electricity at the residence, so a lot of times if they was working, they would just stay here."

Having available supplies on hand, or the ability to be resupplied, during a shelter in place operation is, of course, critical to a successful end state. Carceral facilities rely either on their own caches or contracts with others to resupply them.

"[Named company] is right down the road from us, we have a big [named company], and we're their biggest customer. So generally what happens, you see a hurricane come in, we'll call [food supplier] and get a lot of lunch meat. And we'll put all of our staff in there from the kitchen. And they'll start making bag lunches. And basically, that's the plan. We just go to cold bag lunches with fruit and things like that to get them through meal wise."

These caches include not only food and water, but medical supplies as well.

"I have to give kudos to our medical staff, which we contract out. Our vendor is NaphCare. They did an awesome job of preparing on site and having ready…they had a crash cart ready with the medications for all the inmates for over a week. So we could move with all their medications and be able to administer them immediately without any break in service."

Although the jail or prison may be able to withstand the hazard impact, the infrastructure surrounding it may not. Critical to sustainable living conditions beyond a couple of days is a functioning infrastructure with which to resupply. Carceral executives consider this when deciding to stay or go. If they stay, the infrastructure must withstand impact. If it does not, lifelines will be interrupted and they will be stranded.

"So as a jail, we tried to keep a really good supply of stuff. So I got food. Water is always kind of, you know, that can go really quick. We have bottled water, but that can go quickly. So that's

always a concern. And even when COVID first hit that was an issue too, because of supply chains. But we usually we try to make it so that we can thrive at least a week to 30 days on our own."

Wraparound

When evacuation is chosen to avoid hazard impact, carceral executives indicated that wraparound services are key to any kind of successful end state. FEMA (2021) defines wraparound services as:

Wraparound services include, but are not limited to, sheltering, feeding, medical care, access to distributed commodities, personal assistance services, spiritual care, childcare, clothing assistance, case management, transportation assistance, and vital records assistance (p.121).

Although intended to describe the services available to evacuated civilians, most of these still apply to inmates, at least in the minds of carceral administrators.

"I say services, core services such as food, feeding, medic, medical, those type of things, you know, clothing, bedding, you know, so they are, we're able to go to wherever we need to go. And we're, we're not missing a meal. We're not missing the medical packs. We're not, you know, people are sleeping on, you know, mattresses, they're not, you know, just cuddled in the corner. And staff are there and everybody's safe, meaning we had no injuries, we had no extraordinary issues, you know, things always happen, but nothing that would cause a safety or health concern, and we moved it and we're able to do it safely without any issue. That, I think, is success."

Having enough food, water, and medicine at the host institution for both in-house inmates and those they are receiving, is a planning concern and one dealt with in several ways. One of these is to have a contract or mutual aid agreement with another facility.

"So in the contract that we did after the hurricane, the contract said that they [host jail] will take care of any any medical needs they [inmates] have after they get there. And we, every inmate that had medication was sent with a five-day packet of their medication."

One Northwestern state that evacuated three prisons into one, is using a common menu and feeding plan. Meals were the same across all prisons in the state every day. This made it easier to acquire a short term food supply for a large number of inmates.

"Well, luckily, we store 24 hours of food on hand. So we had enough to feed 6000 meals, you know, so the food services were able just to modify two meals together. So the staff in there did a remarkable job of figuring out like how to beef it up and modify two meals into one. And then we were able to start ordering food from the warehouse here, but we were planning for the next day and brought some of the food from the evac institutions that, you know, so we feed a cyclic menu, so everybody's feeding the same thing. So really, it was bringing the food over from other institutions and warehouse to just double our meal size."

A host jail on the Gulf Coast made these preparations when they were notified of incoming evacuees.

"Our kitchen supervisors, they made sure that on their next food order that they they ordered larger for the influx of offenders that we will be housing."

Having adequate bed space at the host facility is another variable to consider. Solutions included using so called "boat beds" that resemble plastic sleds just large enough for bedding material and an inmate. These are laid on the floor along the wall of congregate areas or in cells.

"So we would have to put some boats which is basically a plastic tub that the mattress sits in that sits on the floor. We put some of those down."

Bed space can also be found at host institutions if vacancies exist in active facilities or idle buildings. Shuffling host inmates can open beds for evacuees while keeping the two populations separate. From the Gulf Coast:

"They [host] actually had open beds, they had enough open beds, and they were able to move inmates out of an entire building. So we got the entire building, which was a smaller building, but they were…I think they had juveniles or somebody over in that area. So they moved them out to another secure location. You know, they weren't on a floor or anything. It's a big, a big jail. They have several jails. It's a big county, and they just had the space available."

In the Northwest, an entire wing of a host jail had been closed so the sending institution was able to use it.

"Commissioners and other bodies that vote for our public dollars have chosen to close jail beds over the years. So I sit with a facility that could hold well over 1000 people. And I have currently well, at the time, I should say, I had 293 beds, in five different units, open dorm style that were all unfunded. But we keep them basically ready to go at any time. So for us it was we had the jail space, we had all of the infrastructure already in place. So it's simply a matter of opening those units and putting staff in them."

A hybrid of the two solutions also worked for a multi-prison evacuation in the Northwest.

"So we had one unit here that was closed. So we opened that up. So that was 120 beds. So we open that up. And then we had one of our special housing units of 49 beds open, that we utilize, we use that for special people that we knew we had to get out. So other than that, it was floor space. So then we just started to identify where we could safely put people. So on our recreation yard, we have a basketball court and a card room. So we put people on the floor there. And then all of our education classrooms, we put people on the floor, everywhere. We have an activity section; it used to be the dining room here back when the penitentiary opened, many, many years

ago, we used all that floor space, and then used floor space in every unit outside the tiers. And I mean, if there's floor space here, we found a way to put put some bodies there. Next thing you know, we ended up with 1500 places."

Although putting so many inmates in close proximity during the COVID pandemic violated CDC recommendations for safe distancing, the alternative was not a viable option. As one warden put it,

"You got a choice. You can for sure die in the fire or you can take your chances with the COVID."

Regarding how COVID influenced evacuation or shelter in place decisions, administrators uniformly saw approaching fire, hurricanes, or chemicals as a greater risk than the virus. Indeed, some protective actions required greater exposure to the virus rather than less, as is desired.

"You know, it's really a bad situation in the middle of COVID. You have to shut your air handlers off because, you know, you have to do the best you can to not get that, that air [fire smoke] inside. And even then, you know, you're dealing with, you know, many people that have breathing difficulties as it is. And so it'd be, it does become a life safety issue for the population."

This is also true during evacuation transport. The time required to evacuate inmates would be too great to avoid the hazard if social distancing constraints were adhered to on buses.

"That was one of the concerns some people brought up. And my explanation to them was, you know, fire will kill you right now. You know, so I gotta get them away from the risk first. And so yeah, you know, is it ideal to fill a bus? No. But it's not ideal to let them sit there and and die either. You know, the physical distancing wasn't an option. It was all, you know, mask up and get on the bus."

In addition to available bed space, carceral executives listed access to legal counsel as one of the available wraparound services to consider evacuation a success. To that end, efforts are made by host and impacted facilities alike to ensure Zoom access is provided to inmates as needed. Where Zoom, or an equivalent virtual platform, is not available, some proceedings are pushed back or inmates are shuttled by carceral transport back to the impacted jurisdiction for an in person appearance. This allows inmates in person access to counsel and courts.

"We [impacted jail] had been already operating through Zoom because of COVID. So a lot of these facilities are set up for zoom. But a lot of them are what I would call rural. They don't have broadband and that's a problem. So we have to move them [inmates] to a site where they can actually get on zoom. And then because of COVID we had our, the district attorney's office had pushed off jury trials, which they just started back, so we've only had about four or five trials. So, but we have a transportation department that's…they're bringing inmates places every day and they're picking up inmates every every day."

Staffing at host facilities is as much of a concern as that of impacted facilities. Carceral staff at host institutions are needed to properly secure, transport, and monitor the increased inmate population. This is easier to achieve for the host than for a facility in the impact area. Host jails or prisons with true bed availability, not just a place on the floor, need help with the extra headcount. One way to achieve this is to relocate impacted staff to temporary housing close to the host facility if the host is too far for a daily commute.

"With the evacuation, we actually moved them [inmates] from [named prison] to [named prison]. So that's about three hours away. So yeah, that was part of the logistics of it is I had to find hotels for staff. So yeah, there's per diem, there's hotels. And that was a little bit of a challenge in the middle of a wildfire is, you know, just finding housing for people going over there."

Host facilities close enough to the impact are augmented with impacted staff within commuting distance.

"What we did was I assigned a lieutenant over that building over there in [named county], and each squad gave five deputies to report to [named county] so they weren't staying the night there. They would go home and come back for their shift. Now obviously, we gave them travel time to get over there."

One host prison chose to use only internal staff rather than integrate additional staff from the impacted prisons.

"Actually, we were gonna do it with staff on hand. So we had we, we believe that we would be able to deal with it with staff on hand. We didn't want to get too many chiefs, not enough Indians. We didn't want to have too many people where everybody's just running around and nobody knew what was going on. You know, sometimes people just get in each other's way. Because of our logistical setup and architectural design of [named host prison], it takes less staffing to supervise as some of the other institutions. We were relying somewhat on the population was going to be compliant on the fact that they were were evacuated for for your own safety. So we put a little faith in humans, humankind that, hey, their just gonna be happy to be safe. And you know, they'll work with us and the population living here will work with us to ensure that everybody's safe."

One problem for carceral execs was how to keep impacted staff not needed at host facilities employed when there are few, if any, inmates. One emergent natural solution to help alleviate this is staff attrition. Carceral staff in the impact area can choose to leave the organization all together.

"So we went from having four shifts down, I'm sorry, went from having eight shifts to having four shifts. So we lost a lot of staff who just, it happens every hurricane, once they go through it, and have to stay here three or four weeks [after impact]. We usually have about 300 staff members,

and we're down 70 today, and we haven't hired anybody back. And the last word I got is we're not going to do that until the two facilities are close to being repaired."

Impacted staff left behind with no carceral duties are given various jobs to keep them productive without having to lay them off.

"We've got a lot of people loaned out to other divisions. We've got guys that are doing transports and working patrol. We have a safe school program, and we even got guys doing crossing guard duty. I mean, we've spread them out."

Similar tactics were adopted by others to keep carceral staff busy.

"They're still commissioned officers. We kept at least two jail staff, three jail staff in the, in our, you know, in the jail area, because we still, when they get arrested, we still have to book them. So we still kept, you know, a few deputies, around the clock in our correctional staff working in the jail. The rest of the correctional staff, they actually helped out with a lot of other things. As the sheriff's office, they worked Safe patrol, they rode with some patrol guys. We had cleanup crews, deputies that would go with chainsaws and clear roadways. We had a distribution center, they would go work at a distribution center for our community. They would pass out food, water, cleaning supplies, diapers, hygiene, anything that you would need, we actually ran our own distribution center."

Funding

Evacuating and caring for inmates is expensive. Transportation, security measures, and wraparound services are not free. The jurisdictions interviewed finance disaster preparation, response, and recovery operations several ways. First, jail funding often begins outside the Sheriff's office in the Emergency Management Office. OEM professionals faced with routine disaster create mitigation plans often for the sole purpose of securing FEMA funding.

"I want to make sure I kind of delineate and explain what the reason is for the hazard mitigation plan. It is, it is not really meant for response operations. All it is there for is it's a check the box for FEMA funding."

FEMA dollars are used to harden facilities, including jails, against the next routine disaster. This is especially true when the OEM is co-located with the sheriff's office and jail.

"We actually used hazard mitigation funding for our saferoom, which is our backup EOC, that covers the facility itself, which has a internal 200 kw generator, a water system, you know, it's hardened for up to 200 mile an hour missiles."

Although not a direct revenue stream for local jails, FEMA mitigation and recovery dollars lessen the burden on the county budget to support jail disaster operations. "Costs related to providing emergency assistance such as mass care may be reimbursable through FEMA's Public Assistance (PA) program. Reimbursement would be applicable to cover costs that support emergency protective measures" (FEMA, 2009, p.62).

Second, sheriff's offices faced with routine disasters draw on past experience and public support to gather disaster funds independent of FEMA. A long-tenured sheriff is positioned especially well to build funds for broad disaster duties. These duties include jail evacuation, shelter in place, and recovery operations.

"The sheriff we have now is the sheriff we had in 2005 and he is adamant that our department was not going to go through that [Hurricane Rita financial shortfall] again. You know, back then we had financial problems. Now, our Sheriff built our finances up to deal with an issue like this. We were gonna have the money to be able to deal with the hurricane and not have to be dependent upon FEMA. I mean, we're still gonna go after our FEMA money, but we're gonna be alright."

FEMA funds do assist county jails with recovery. However, this process is lengthy which prevents owed dollars from being applied to immediate needs. Planning to be independent of FEMA funds in the short term is necessary.

"The county is in the process of getting reimbursed from FEMA. But FEMA reimbursement…I mean, we just got some of our money from Rita, and that was in 2005. Our Sheriff was, like I said, we all learned a lot of lessons from that and we grew our emergency budget to where we would not have to ever worry about FEMA. We would be fine on our own. He's been a very good steward of the county's money, and we've prepared for this. Like I said, I attribute a lot of it to our Sheriff and our command staff because they're all very forward thinkers."

Having constituents who experience the same disasters year after year also helps garner support for funds needed by the Sheriff's Office. Indeed, one jurisdiction was able to get a special sales tax passed to aid the Sheriff.

"We've passed a sales tax in 2006. He [sheriff] got a sales tax passed for equipment, for deputies raises, and for an emergency fund."

Emergency funds are used to finance staff overtime hours and purchase needed equipment including extra shackles and bus modifications.

Third, many counties in the interviewed regions have more than one jail. This is a method for the Sheriff's Office to raise revenue not dependent on taxes or FEMA.

"So we have a jail and a prison. Our jail is owned by the Police Jury. Our prison, the previous, one of the previous sheriff's bought that facility. He used the money from housing federal inmates and built a facility that's just a little bigger than this facility."

The addition of a second facility was not intended to hold county detainees. Instead, it is used to generate revenue from housing state and federal inmates.

"It's just a way to generate revenue for our department, when we could get paid to house inmates. We thought this, having this other building it could, we could house inmates for other people."

Housing state and federal inmates generates revenue because the bed-per-day fee paid to the jail from the state DOC and the federal DOJ is greater than what is paid for county inmates. Indeed, one state prefers to house many of its inmates in county jails rather than build more state prisons.

"[Named state] doesn't have enough prisons for the sentenced inmates. So the sheriff's hold more of the state prisoners than the state actually holds. But with that being said, we have to, we have to meet their standards to be able to hold their inmates and of course they pay us for em."

Housing state inmates is a valuable, long-term windfall for jails because the state pays more per day per inmate than the county does.

"So, we get about $3 a day for an inmate. That's the price the county pays, and they paid since beginning of time. The going rate for a state inmate is $26.50."

The higher per-day rate the state provides does have a downside. This rate is what host institutions in this state expect to be paid by impacted jurisdictions when inmates are evacuated. This is one reason why jails across the state are so willing to pick up evacuated inmates.

"Now the counties that pickup inmates, they'll come and pick them up because they're looking to make money off of them, you know. They've got a contract with our county that they get $26.50 a day for each inmate."

Jails across one Gulf Coast state had available bed space just before hurricane impact and a loss of revenue because the supply of federal Immigration and Naturalization Service (INS) detainees had been reduced.

"Some of the other counties kind of do like we do. They have overflow, and they have extra inmates for state and for federal. And luckily, a few of them were keeping INS inmates, and under the previous administration, they knocked that number way down, and they lost a ton of population. So they were looking for population when this just happened to happen."

Inmates losses at all levels during an evacuation depletes general county funds as well as denies the Sheriff a revenue stream. Instead of paying its own jail a minimal fee for detainees, counties must pay a host facility the full state rate.

"So the county is flipping the dime for that. And they're, they're not happy about it. Because they're used to paying $3.50 for an inmate."

Extensive damages to the impacted facility can necessitate the lengthy, and expensive, use of host facilities. One county's jail was so severely damaged that inmates will not be able to return for up to a year.

"We're probably a year away from having all inmates here. We had significant damage."

Finally, jails can use work programs as a revenue source independent of state or federal oversight. One impacted county found regulations surrounding housing state or federal inmates too cumbersome so opted to cultivate revenue through a different source while reducing expenses.

"Something we have that hardly any other jails have…we have a welding shop and a carpenter shop and a diesel shop. So we are able to utilize those assets to help the county do anything that's needed. We build furniture and sell to the public. We have horticulture, we have hydroponic lettuce we grow to feed the inmates. We have pigs and chickens and cows, you know, 1000s of eggs a day are coming into the jail to feed the inmates. So we're pretty, I won't say self-sufficient, but I mean, we do a lot that most jails, and most prisons, honestly don't do. So we have a pretty big operation out back here."

This impacted jail made the decision not to host either state or federal inmates for money.

"We've done that in the past, you know, 20 years ago, and was not a good situation for us. And we've recently been reached out to again by the feds to see if we would take any, and I turned them down. We were not interested in in housing their inmates."

When pressed about why the jail would turn down the opportunity for revenue when many others do not, the Commander had this to say,

"We had immigration inmates at one time and it was just not worth the money that they were bringing in. Now, you get paid like three times as much for a federal inmate than you do for a local inmate, a county inmate, but it really wasn't worth the headache. When you're dealing with immigration inmates or federal inmates, they will go by a different set of rules and you have to honor those rules and it's just not worth it. You know, we're not hurting for money. Basically, we're doing okay, and we save a lot of money for the taxpayers using the farm and the road gangs and things like that. So we feel like we have a good balance and the money's just not necessary."

The history of a county's exposure to routine disaster shapes the methods they have found to pay for it. FEMA disaster funds are expected but local jails find them unreliable. As a result, funds are laid aside drawing on the local tax base, housing the inmates of others, and by reducing costs through production of their own goods and services.

Financial independence is easier to attain for prisons than for local jails. In contrast with standalone county jails, state prisons do not need to rely on external facilities to hold evacuated inmates. Bed space and resources are shared across internal institutions. As a result, when inmates are evacuated from one state facility to another, dollars are moved between ledgers within the organization rather than being paid to a third party.

Isomorphic Learning

Because carceral facilities in the three regions of this study are faced with routine disasters, the ability to learn from their experiences helps avoid problems of the past. To preserve this institutional knowledge, interviewed facilities all conduct an AAR of one type or another after each impact.

Few entities provided a copy of their internal post-disaster AAR. This was for two main reasons. First, because of the personal information contained throughout the AAR document, most interviewees said they needed to maintain confidentiality so could not release it. The request made by the PI for a redacted version was seen as unreasonable because of the amount of effort needed to accomplish this given that personal details permeate the review. Additionally, one county jail is currently involved in a class-action civil suit and is prohibited by counsel from releasing documents related to the disaster.

Second, because the disasters in this study all occurred within the last seven months prior to the interviews, not all AARs had been completed. This is especially true for the EM offices as there are more organizations involved in the disaster and therefore more people to seek feedback from. The EM organizations use online surveys in addition to meetings to capture AAR data while the carceral institutions relied solely on meetings.

One county jail could not, rather than would not, provide an AAR because they contracted it to a third party and it was not complete at the time of the interview nor was it expected to be done for several months. A third party AAR contract was unusual for this sample of interviewees. All but one entity conducted their AAR by seeking feedback from disaster participants.

Regional differences in hazard exposure did not influence the decision to conduct AARs. However, at the county level, AARs from previous disasters under a different administration are hard, if not impossible, to recover. Indeed, when a new Sheriff is elected, like any political

organization, changes are made in the leadership which prevents institutional knowledge from being passed along as freely.

"The jail hasn't done an AAR, but that's something that we're working on as we speak. You got to understand this, the sheriff's office is a completely new administration. The sheriff took office in July so the whole administration is basically new. Matter of fact, I didn't find our emergency operation plan until after the storm had passed. So it was actually lost and so I'm rewriting that right now."

The loss of institutional knowledge within an organization can necessitate bringing in experienced personnel from a separate jurisdiction to help manage recovery efforts.

"I actually had a couple people from [named county] come in. Their personnel came down here and helped me out. They were very experienced at it and that was a blessing in the sky."

Indeed, the lack of depth of experience in the new Sheriff's administration was felt during the COVID pandemic. Key personnel had to be quarantined which, for this jurisdiction, meant a retiree was needed to cover duties.

"So luckily, fella by the name of [redacted] was a was one of the past directors. And he said…he's actually the fire chief for [named city]. So he said, 'Yeah, I'll step up now I'll take over while you all are down for two weeks.' So that was a blessing, knowing that we have that resource."

True isomorphic learning requires learning between organizations within the same industry. Little of this is happening in the carceral world. Jails are especially poor at sharing lessons learned. Interviewees attributed this partially to the standalone nature of county politics and partially to fear of litigation. One jail commander put it this way,

"I think there's, there's benefit to being able to learn from other people. And I get the litigation part of it. You know, you say something, someone's gonna use it against you. But at the same time, there's no way we can learn from these type of incidents, you know, unless we share."

While direct facility-to-facility sharing does not happen, jail and prison executives alike mentioned two national level organizations where best practices can be found aiding isomorphic learning. One prison warden shared this,

"We do sometimes steal stuff from ACA [American Correctional Association] and the National Institute of Corrections [NIC] is a big one for us. That has a lot of resources and and that we share information with."

A jail commander had a similar statement.

"Yeah, there's the the AJA, the American Jail Association. And the ACA, which is American Correctional Association. The AJA has a lot of…they have a listserv, they share a lot of stuff. And then, and I see the National Institute of Corrections, you know, they publish obviously, a lot of stuff, especially on manuals and stuff for officers."

In all, a successful carceral disaster end state was identified by carceral executives and distilled by the PI into five categories. The security of inmates, staff, and the public is the primary concern. This is for both shelter in place and evacuation operations.

While shelter in place is the preferred option, routine disasters require regular inmate evacuation. Wraparound services provided by carceral hosts are essential to all in defining what constitutes a successful end state. Meeting Maslow's basic needs with the addition of access to legal resources and adequate staffing encompass what is meant by wraparound.

Funding carceral disaster operations has a checkered past within the carceral community. By necessity, local jails have over time develop methods of funding these with little aid from the

outside. Jails with a sheriff serving multiple terms fare best because of long term financial planning. Any available external aid is not expected to materialize quickly, if at all, so is not included when assessing available monetary sources.

Summary of Findings

Emergency managers and carceral executives do not view jail or prison disaster preparedness as the concern of anyone other than the corrections professionals who run them. As a result, disaster preparation and responses are parallel but not synchronous.

Interoperability problems with inmate evacuation tracking, jail management systems, and WebEOC prevent broad situational awareness in impacted jurisdictions as well as efficient operations. The relatively low-tech nature of transportation assets makes interoperability easier as long as plans are made well before hazard impact.

Carceral industry views about what comprises a successful post-disaster end state includes more than simply meeting Maslow's basic human needs. Inmate access to legal resources, adequate financial support, and capturing lessons learned in using an AAR are also required. Provided below are all four groupings of the codes and categories for each theme (Table 4).

Code	Category	Theme
Vulnerable Population	THIRA/HVRA	Carceral facilities not seen as EM concern
Disaster Frequency		
Natural Disaster		
Manmade Disaster		
EM exercise	Training & Exercise	
Corrections exercise		
Corrections training		
Guide use		

EM decisions		
LE decisions	Decision Making	
Political decisions		
Media issue		
Inmate laborers		
Laundry		**Parallel but not Synchronous Collaboration**
Kitchen	Jail as resource	
Generator Power		
Water		
Collaboration cycle		
Synchronous Col	Collaboration w/ EM	
Parallel Col		
ESF 13 crossover		

Civilian tracking		
Inmate tracking		
Manifest	Evacuee tracking	
NMETS - FEMA		
Emtrack - Juvare		
JMS		
WebEOC awareness	Tech Usage	
Virtual meetings		**Interoperability opportunities**
Impacted transport		
Host transport		
DOC transport		
3rd Party Transport	Transportation	
Sec Escort		
Staggered arrive/depart		
En Masse arrive/depart		

Inmate Sec		
Staff Sec	Security	
Public Safety		
Jail construction		
Supplies		
Generators		
Plumbing (Valves & Hookups)	Shelter in place	
Bed space		
Staffing		
Food		
Water		
Medicine		
Bed space	Wraparound (Sustainability)	**Success (Endstate)**
No deaths		
Staffing		
Access to legal		
COVID impact		
House outside inmates		
FEMA reimbursement		
Earmarked Taxes		
Contract/MAA	Funding	
Jail products		
Grant potential		
Internal AAR		
External AAR		
Disaster Frequency	Isomorphic Learning	
Region difference		

Table 4: Summary of Findings

CHAPTER V

DISCUSSION AND RECOMMENDATIONS

This chapter discusses the study's themes and is structured using the six research questions. The preceding findings chapter provides the foundation to answering these questions and frame the 31 posited recommendations. Each recommendation is tagged as related to either policy or practice. Where appropriate, their alignment with existing theory is noted. These recommendations are intended to improve carceral disaster preparedness and establish best practices so the work of safeguarding human life and dignity can be furthered.

RQ1: What are stakeholders doing, or not doing, to prepare carceral facilities for predictable, slow onset disaster?

Emergency managers and OEMs are key stakeholders in carceral preparedness, although they do not acknowledge this. The existence of large vulnerable populations within the walls of correctional institutions in their jurisdictions should be a concern for OEMs. This is not the case.

1. *OEMs and carceral executives should see EM as having a direct role in carceral disaster operations. (Practice)*

Only one interviewed OEM had a direct role in carceral disaster response. This EM was a deputy for small sheriff's office and doubled as the county's OEM. All others view disaster operations in jails and prisons as a standalone venture which succeeds or fails independent of the OEM.

Because of this, the assistance to be gained by carceral organizations from the expertise and experience of OEMs is lost. Disaster operations are not a core function of carceral facilities but they are for OEMs.

2. *OEMs should create THIRA vulnerability maps and include carceral facilities on them. (Practice)*

This study reveals there are OEMs that do not have a vulnerability map in spite of its importance to disaster planning (Morrow, 1999). Without planning, vulnerable populations are left to face disasters with little or no support. Moreover, those who do have vulnerability maps do not include carceral facilities as a critical concentration. Indeed, several OEMs do not even know what carceral facilities are within their jurisdiction. This reinforces the Social Construction theory put forward by Schneider and Ingram (1993) because inmates lack power and are constructed in a negative light. They are someone else's problem. OEM sympathy for vulnerable populations other than inmates is a real detriment to the incarcerated population. Indeed, although they clearly meet the criteria of a vulnerable population (Blaikie et al., 1994), inmates are not treated as such by the EMs in this study.

3. *OEMs should help carceral facilities identify local risks beyond the routine. (Practice)*

Jail and prison executives are often unaware of the manmade hazards surrounding the facility. As a result, they are unprepared when disaster strikes. Simply providing carceral executives with a copy of the THIRA is not enough as they see these as tedious fantasy documents not worth reading. For example, one THIRA provided to the PI was over 400 pages. The onus is on EMs to help raise risk awareness for carceral executives using realistic and manageable tools.

4. OEMs should include carceral executives in exercises. (Practice)

The inclusion of commanders and wardens in EM rehearsals can build effective relationships between the two. Moreover, greater awareness of the other's plans, resources, and operations can also be achieved. This spurs the sharing of best practices, collaborative decision making, relationship building, and the creation of a more complete risk assessment. When carceral executives are included in disaster planning, their visibility of hazards and connectedness to other disaster organizations is improved. Carceral facilities should also include OEMs in inmate evacuation rehearsals, especially in areas where disasters are frequent. This is an opportunity for OEMs to become familiar with the challenges of carceral evacs and offer recommendations where appropriate.

5. Have a media plan. (Practice)

Local communication between the jail and the public is limited to the jail's webpage which is typically nested inside the sheriff's office or county's webpage. Consequently, when disasters occur and inmates must be moved or shelter in place, there is no consistently coherent way to inform families or the press of inmate whereabouts or living conditions. The sheriff, or the PIO if there is one, is preoccupied with LE disaster duties so is unable to adequately manage a coherent media message from the jail. Jails with a well-crafted press release and social media plan can help relieve this burden. Communication will still go through the PIO or sheriff, but will be more timely and thorough.

RQ2: What have been some of the methods of dealing with routine disasters that have yielded successful outcomes and (**RQ3**) what problems were encountered in making this happen?

6. Employee Hurricane Packets are a model for others. (Practice)

The use of a hurricane packet - although used and intended for jail staff on the Gulf Coast – can adopted by local or state facilities facing other routine hazards. Wildfires, severe winter weather, and flooding are examples of scenarios where an employee disaster prep packet is useful. Not only are the families of carceral staff better equipped to face the hazard after completing preparations, expectations of staff disaster duties are better communicated, staff are free to focus on the job at hand, and the probability of their being at work is improved.

7. Practice inmate evacuation during maintenance. (Practice)

Small jails sometimes have to evacuate to perform broad maintenance because there are no vacant cells to shuffle inmates in to. This is a rehearsal for evacuation operations and a chance to renew agreements with host facilities. Larger jails or prisons can adopt a similar practice. For example, rather than moving inmates from one pod to another for a plumbing issue, use the opportunity to conduct an evacuation on a smaller scale with fewer time constraints. Lessons learned from these can be applied to the inevitable full evacuation. The costs and coordination needed for a maintenance evacuation is an obstacle. However, if the maintenance is routine, it can be planned for and the cost built into the training or maintenance budget. In the case of small jails with no other option, maintenance evacuations are simply routine operating costs.

8. *Make an evacuation decision early. (Practice)*

The time needed to evacuate carceral facilities is greater than that of the general population because of the increased security risks. Facilities who make an evacuation decision early have more time to prepare transportation and better odds at maintaining accountability. If the evacuation was not needed, it is at least a rehearsal for those times when it is. Lindell & Perry's (2012) Protective Action Decision Model (PADM) can be applied to carceral executives who wrestle with the decision to evacuate or shelter in place. Although this theory is directed at

household level decision makers in disaster, the same variables appear relevant in carceral decision making.

Not having accurate or timely information about an approaching hazard is an obstacle to deciding how best to face it. Evacuation decisions made early and correctly happen because carceral executives are connected to credible information sources. Protective actions are enhanced by good communication from OEMs throughout the disaster cycle (Perko et al., 2013). However, direct communication of risk from OEMs to carceral executives is missing. Jails receive OEM risk communications only through interaction with the top leaders in the Sheriff's administration. Although the Sheriff interacts with the OEM at county level briefings, the time lag in risk communication to the carceral staff delays decision making and protective action.

9. Have access to sufficient power for shelter in place operations. (Practice)

During peak demand times – extreme temperatures or large outages – regional power companies ask carceral executives to use their generators to power facilities thereby lessening the demand on the grid. This provides more power to general customers yet allows daily activities inside the facility to continue. Moreover, carceral facilities with large backup power supplies are more likely to shelter in place which eliminates the expense of an evacuation and reduces security problems.

Just because you have a generator does not mean it will work when or for as long as you need it to. A monthly or quarterly test of facility generators is not a true test. Carceral facilities who successfully rely on generator power for days do so because tests are at least 24 hours long. This type of sustained generator test ensures adequate disaster load coverage while providing an opportunity to practice refueling, develop low power operating alternatives, and creating or adjusting procedures for no-power scenarios.

10. Use inmate labor as a response and recovery asset. (Practice & Policy)

Work crews composed of inmates fight wildfires, remove debris, fill sandbags, and repair roads to aid general disaster response and recovery. Additionally, large carceral facilities can offer laundry and kitchen services staffed by inmate laborers further supporting the recovery operations. This valuable human resource speeds recovery for a small cost thus aiding community resilience. However, a good relationship between the EOC and carceral leadership is needed for coordinated inmate labor use. Successful use of inmate labor crews involves an experienced staff supervisor and inmates who are a minimal security risk. Specialized equipment and safety needs must also be met.

11. Place an inmate liaison at the Incident Command Center. (Practice & Policy)

Successful integration of inmate labor into the overall disaster response requires a knowledgeable liaison in the incident command (IC). This person, usually a ranking officer, is the direct advisor to the commander and helps to coordinate use of inmate labor or other jail resources. Additionally, the IC liaison is an advocate for the needs of the jail or prison.

12. Use and expand virtual platforms for evacuated inmate legal services. (Practice & Policy)

When impacted inmates need to be evacuated for extended periods, their adjudication and legal service must continue. Host and impacted facilities are more successful at maintaining daily operations when it is possible to conduct this business using virtual platforms rather than expending resources to shuttle inmates. Although they may not be able to be physically present, virtual platforms allow the judicial system to move forward with their case thereby improving continuity of operations (FEMA, 2018a). Moreover, improved judge-to-inmate interaction is seen as a positive by-product of virtual meetings. The availability of reliable broadband web access is an obstacle to offering virtual legal services, especially for rural jails. Indeed, as noted in the Methods chapter, interviews with sampled jail commanders were frequently conducted via phone

rather than Zoom to ensure clear audio, uninterrupted conversation, and to preserve existing

bandwidth for inmate legal needs. It is uncertain what remedies may exist to rectify this.

13. Use carceral staff of impacted jails elsewhere. (Practice)

Impacted staff left behind after an inmate evacuation who are not needed for administrative duties

can be employed elsewhere. As they remain sworn deputies, they can assist with other duties. For

example, they can conduct regular patrols, operate distribution points, be school resource officers,

or serve as crossing guards. If inmates remain with a host facility for an extended time, not hiring

carceral staff lost to attrition can reduce underutilized headcount. When appropriate, a controlled

return of inmate evacuees will allow for gradual replacement of lost staff.

14. Evacuate inmates by housing unit. (Practice)

Maintaining the integrity of inmate housing groups during an evacuation promotes routine

behavior because groups are used to living together. Prohibitions against certain persons being

moved together are easier to adhere to when housing units are already established for this.

Established relationships with cohabitants facilitates familiar behaviors thus making the

evacuation process more predictable. Moreover, staff of impacted facilities are used to seeing

certain groups of persons together so an unfamiliar face can be an indicator of an accountability

or security problem.

15. Plumbing modifications help make shelter in place operations sustainable. (Practice & Policy)

Designing or retrofitting plumbing, especially sewage lines, with backflow valves prevents the

return of wastewater into the building during flooding or storm surge events. Firehose compatible

adapters connected to intake lines from outside the building allow fresh, but non-potable, water to

be pumped into the system. Fire or tanker trucks can hook to these when the local water supply is

down or compromised. This provides the ability to conduct basic hygiene activities like flushing the toilet or taking a shower. Potable water can be provided by the bottle for direct consumption and cooking.

16. Jails with multiple funding sources have greater resources for preparation and response. (Policy)

Disasters are expensive, resilient agencies do not rely heavily on funding from typical taxes to cover the bill. Having additional funds for disasters helps pay for carceral staff overtime, host facility per diem rates, equipment purchases, building hardening, and wraparound services. One method of achieving this is to have more than one jail, or many vacant beds. Having additional bed space gives jails an opportunity to house state and federal inmates for a premium fee. However, housing these inmates comes with additional oversight and rules that may be undesirable. Additional funding can be sourced through special taxes earmarked for the disaster needs of the sheriff's office. As a politician, the local sheriff can show voters the need for additional disaster related funds. These can be justified by arguing for deputy overtime pay, purchasing extra shackles, or other resources as needed. Inmate labor is another funding stream that can be found in workshops and farms of all types. Products built or grown can be sold to augment revenue or used simply to reduce the cost of inmate care. Indeed, funding sources are limited only by the creative capacity of carceral leadership.

RQ4: To what extent are carceral administrators aware of and using the NIC guide, or any others?

17. Carceral executives should be creating and using a disaster guide. (Practice & Policy)

Guides created by OEMs are extensive because of HMGP requirements. These could be a model for carceral facilities. However, carceral guides should be careful to avoid fantasy document status. Recall fantasy documents are created by authorities to convince an audience "that they

ought to believe what an organization says but with little instrumental utility in them" (Clarke, 1999, p.2). Confining guides to local routine disasters rather than an exhaustive all-hazards approach may be best. Indeed, the NIC has a generic disaster checklist which could be modified with little effort.

Guide creation is important for passing along institutional knowledge. This is especially true at the county jail level where complete turnover of the leadership is as close as the next election. However, sampled carceral administrators are using disaster guides in a limited fashion or not at all. Because disaster hazards in these regions are so frequent as to become routine, executives use disaster guides infrequently. Instead, they rely on the experience and memory of their staff to prepare for and respond to routine disasters. Institutional knowledge is the primary medium for passing along lessons learned. As one would expect, this method is unreliable. When an election causes the turnover of key leadership, institutional knowledge is lost and the jail is left to rediscover the same lessons. One of the sampled jails experienced this firsthand. The sheriff's commanders and chief deputies had all been on the job less than a year so when disaster struck they had not yet been through a disaster cycle in their new roles. As a result, operational relationships did not exist inside or outside the department creating a deficiency in response and recovery effectiveness. Pragmatic guides built on shared best practices will help encourage wide use and promote consistent preparedness.

18. Carceral executives should share disaster guides. (Practice)

Several carceral executives mentioned national and regional corrections associations that publish guides and reports. Agencies like the National Sheriff's Association or National Institute of Corrections are excellent candidates to promote collection and dissemination of best practices.

However, these were primarily accessed for non-disaster related prison emergencies. None of the sampled executives passed disaster related best practices to these organizations to be shared with

others. Indeed, jail commanders in particular lamented this when they were given descriptions of the best practices from others across the sampled regions. These practices were seen as valuable because of their capacity to reduce disaster related problems but are not being shared through any medium or enshrined in a useable guide. As noted earlier, this is an area where the experience of an OEM in creating guides could be leveraged by carceral executives to create their own.

RQ5: To what extent are LE and carceral administrators collaborating with the EM professionals in their jurisdictions?

The need for improved carceral disaster preparedness is urgent as hazard frequency, intensity, and scale grow (Hore et al., 2018). Emergency managers collaborate with LE administrators in few areas and even less with carceral executives. Interviewees in the sampled regions made this clear through statements regarding training and exercises, decision making, inmate evacuees, use and access to technology, security, and isomorphic learning. This is not a one-sided issue; both EM and carceral executives can act to strengthen collaboration and ultimately better prepare for and respond to disaster.

19. Emergency Managers should initiate contact with carceral entities. (Practice & Policy)

Using the Emergency Management Collaboration Cycle (Olszewski & Siebeneck, 2021) as a guide, the onus rests on OEMs to begin the Initiation phase. They can do this by recognizing their role in carceral disaster operations then reach out to local facilities. Because the profession of emergency management requires engaging members of the whole community (Chang & Neal, 2019), EM coordinators must invite carceral commanders and wardens to participate in training and exercises which directly benefit them. For example, evacuation tabletops run by the OEM showcase the resources and planning needed to execute a large-scale movement of citizens during disaster. If carceral entities are included, this can be an opportunity to begin a dialogue with them about obstacles they face when evacuating inmates and how the OEM can help. Exercises that

include carceral executives also provide OEMs with a means of gathering information from these persons regarding their evacuation or shelter in place disaster plans. This improves OEM situational awareness and overall security while building trust between the two (Longstaff & Yang, 2008).

20. Carceral executives should recognize the OEM as a partner in disaster readiness. (Practice)

Recall that neither EM nor carceral administrators see an active role for the OEM in carceral disaster preparedness. Once carceral administrators are a regular part of EM exercises, they will begin to appreciate the resources and expertise that is available from their EM counterparts and a partnership can form. This movement from independence to a complementary partnership has been theorized by Young (2000) in a study of relationships between non-profits and government. Indeed, sampled carceral executives who partnered with an EM professional embedded within their organization were quick to praise the timeliness and quality of the support they received. This praise was given even without a complete understanding of the full capabilities of their EM component. Much more can be gained by the carceral world when they are better educated about how the OEM can aid them and a stronger relationship exists. This cannot help but ease the carceral perception that a relationship with the OEM is lopsided; that the OEM is only interested in what jails and prisons can do for them.

21. OEM expertise should be used to improve carceral disaster operations. (Practice & Policy)

The expertise of the sampled OEMs is underutilized by their carceral counterparts. OEM expertise, honed through recurring disasters, can help carceral executives who struggle with tracking, arranging transportation, establishing wrap around services, accessing resources, and shelter in place operations. For example, EM coordinators can share their knowledge of tracking systems used for general evacuations. When adapted for carceral use, these systems can help overcome the problems associated with limited JMS interoperability. Where hazard impact is

frequent and regular, the responses of EM professionals show OEM operations are adept at tracking evacuated persons and belongings. Indeed, evacuees and their property are tracked all the way through to their eventual return home. Jail commanders and prison wardens should recognize this expertise in their OEM counterparts and seek out opportunities to learn from them.

22. OEM situational awareness of carceral disaster evacuations is needed. (Practice)

Given that the evacuation of inmates involves a public safety risk, the local OEM should be concerned about when inmates are moved, what routes are used, and the status of completion. This includes the return of inmates to the impacted institution once normal operations are possible. When greater trust and better collaboration develop between carceral and EM professionals, OEMs in impacted jurisdictions have a greater opportunity to assess the risks to citizens and inmates created by inmate movement. For example, if a busload of inmates breaks down on an egress route during an evacuation, then the OEM should, at the very least, be aware of this. A carceral liaison in the EOC who understands this public safety risk and who has worked with the OEM during previous training exercises, is better positioned to communicate with those who need to know. Moreover, a collaborative effort initiated by the OEM to address the situation can bring to bear greater resources than the carceral unit on its own. These combined resources are better able to mitigate risk and bring about a safe, yet speedy, resolution.

23. Carceral executives should collaborate with the OEM to strengthen their understanding of WebEOC. (Practice)

WebEOC usage is vital to improving carceral disaster preparedness. However, the findings reveal that carceral professionals have limited, if any, knowledge of WebEOC or its capabilities. Improved collaboration with local OEMs is an opportunity for carceral executives to become WebEOC smart. A lack of understanding restricts their ability to fully access available disaster resources. With the exception of the sheriff's office who has the county EM embedded in its

ranks, carceral executives are separated from the OEM by organizational lines and physical location. Closing this gap through better collaboration raises carceral awareness of WebEOC and its capabilities. Carceral executives who are well educated on what is available to them through WebEOC are better situated to make informed decisions in the face of hazards. For example, the findings indicate that shelter in place is the preferred option when carceral facilities are faced with a hazard. Therefore, having a more complete picture of available resources may improve inmate conditions. When previously invisible resources and expertise are made known to them through WebEOC, carceral disaster preparedness is strengthened

24. The disaster AARs of OEMs and carceral organizations should include each other. (Practice & Policy)

Although EM and carceral administrators seemingly operate in different industries, there are times when isomorphic learning can happen. Both entities are responsible for safeguarding their respective populations. Although inmates are a subset of the general population, the findings demonstrate they are not considered as such when it comes to disaster preparedness efforts (see also Dement & McAleavy, 2021). Because disaster operations of the OEM and carceral facilities share similarities, it follows that lessons identified during an AAR should be shared between the two. However, none of the sampled executives in either industry include the other in their AAR process. The OEM AARs generally consist of broad surveys seeking feedback from stakeholders and those they see as having a role in the disaster response or recovery. Because OEMs do not see carceral facilities as one of these, those surveys do not reach them thereby excluding any lessons learned they may have developed. The inverse is also true. Carceral AARs do not include OEMs because they see themselves as a standalone agency. Closer collaboration between the two would mean each is included in the disaster operations of the other and therefore a stakeholder in the other's AAR. Isomorphic learning is thereby improved as the lessons each learned is shared with the other.

RQ6: To what extent must carceral facilities modify their disaster operations?

There are certainly modifications that can improve carceral disaster preparedness but there is no panacea. Each jurisdiction has its organic strengths and improvement opportunities. Some gains can be made by jails and prisons internally while others will require collaboration with those outside.

25. Carceral disaster preparedness should be enforced by outside agencies with the authority to do so. (Policy)

Unlike EM mitigation plans, no part of carceral disaster preparedness is a condition for receipt of post-disaster funding. Sampled counties on the Gulf Coast commented on FEMA funds they had gotten, or were expecting, to pay recovery costs with no strings attached. No state OEM oversight occurs because jail and prison disaster readiness are seen as the exclusive domain of the DOC. The DOC does conduct audits of jails who house state and federal inmates to ensure compliance with established operating standards, but nothing beyond. This same system of audits could be adapted to include carceral disaster preparedness if the state's DOC and OEM view it as a joint effort. These audits would carry extra weight if per diem rates and recovery payments were conditional on the results.

26. Movement of inmates between jails during disaster is best facilitated by the state's DOC. (Practice & Policy)

The DOC has access to greater transportation assets than any single county. These include prison buses equipped for the security needs of inmate transport and accompanying shackles. Mass inmate evacuations can happen quickly when these assets are made available before impact. When slow-onset disasters are eminent, the DOC can parrot the EM group by pre-staging transport assets if an evacuation appears likely.

By having the DOC coordinate inmate transportation, county v. county political conflicts can be reduced. The DOC becomes the clear authority and decision maker. If local jail transportation assets are used instead of prison buses, the DOC can still provide other equipment as needed like extra shackles, drivers, or escorts. Moreover, DOCs have a greater ability to leverage or encourage compliance with pre-established plans. If host jails are housing state inmates prior to the disaster, the DOC is also already aware of conditions there and if those conditions comply with recognized standards of care.

27. Inmate evacuation tracking needs to improve. (Practice & Policy)

Losing accountability of high-risk inmates is a danger to public safety. Jails and prisons could adopt Juvare's EMTrack software to maintain accountability. EMTrack is a software package closely associated with WebEOC - also developed by Juvare - that can be used by correctional facilities as a way to overcome JMS interoperability problems. Although developed primarily for patient tracking (Juvare, 2021a), EMTrack can be easily adapted for carceral use. Indeed, the PI met virtually with Juvare's EMtrack team several times and observed its capabilities and potential for carceral adaptation. Any type of barcoded wrist band can be used by the software. This is important because OEMs who regularly evacuate are already using barcoded wristbands of various types. As a result, finding a ready supply for carceral use would not be difficult. Moreover, adoption of barcoded wristbands by carceral facilities in routine hazard zones should be mandated by making them an audit item by the DOC or an OEM. This is necessary because it is clear facilities in hazard zones will need to evacuate again. Indeed, the OPP in New Orleans adopted barcoded bands after Katrina and used them to evacuate inmates for Ida (Daley, 2021).

28. Carceral facilities can use COVID techniques to reduce headcount pre-impact. (Practice & Policy)

Efforts to lower inmate headcount have been driven by the need to slow the spread of COVID. This necessity was the genesis for providing headcount reduction decision criteria. For example, persons selected for early release included non-violent offenders or offenders close to the end of a sentence. These same criteria can be used pre-impact for slow-onset hazards, assuming the courts approve. Slow-onset hazards allow authorities time to make decisions and execute well-rehearsed evacuations. A reduced headcount makes carceral evacuations and shelter in place operations simpler. It lowers the transportation need, number of staff required, exposes fewer inmates to risk, and saves money on wrap around services.

29. Carceral entities must more effectively share best practices. (Practice)

The findings indicate that the sampled organizations are siloed in that they operate independently and avoid sharing information (Bento et al., 2020). Carceral executives uniformly acknowledge they do not know how others are handling disaster preparedness but wish they did. When local commanders were informed of the disaster risks faced by their counterparts in other jurisdictions, they had numerous questions about how the facility responded and the outcome. National corrections and LE associations like the NSA exist for this purpose but do not appear to be as effective as they could be. Because many of the recurring slow-onset hazards are regional, individual states may be in a better position to encourage organizational sharing by illuminating their shared risk. For example, holding carceral disaster conferences, offering certifications, or continuing education credits may be effective.

30. How carceral executives define a successful disaster response needs updating. (Policy)

The simple Maslowian approach of meeting basic needs along with no inmate injuries or escapes is no longer sufficient. Although not a direct response to the "success" question, sampled carceral executives hinted that *a successful response must also include end-to-end accountability of inmates*. Indeed, one jail commander was nicknamed the Chaos Coordinator by his peers and

subordinates for his efforts at trying to maintain inmate accountability during and after impact. Not knowing which inmates are where for days creates problems. For example, families do not know how to reach their incarcerated loved ones and the legal process is interrupted when inmates cannot speak to counsel or are unable to make court appearances.

31. Successful carceral disaster response demands overcoming JMS interoperability problems.
(Practice & Policy)

Sampled executives related how inmates being held on either state and local charges can be mistakenly released and need to be recaptured. Moreover, when inmate charges or sentence conditions cannot be seen by the host institution's JMS, inmates can be held too long. Once release notifications are made by the court or sentences are completed, the inability of jails to communicate an inmate's status change in a timely manner results in unnecessary loss of liberty and increases costs associated with wrap around services. EMTrack, or a similar software, has the potential to resolve these problems by bridging incompatible systems with a temporary means of inmate tracking and status communication. Like WebEOC is to the nation's OEMs, if an EMTrack type software can become the supported standard for carceral facilities within a state or region, then true disaster success is more easily achieved.

Summary of recommendations

Table 5 is a summary of the recommendations by RQ. For clarification, each recommendation is linked to one of the four identified themes.

RQ	Theme	Recommendations
RQ1	1	1. OEMs & carceral execs should see EM as having a direct role in carceral disaster operations
	1	2. OEMs should create THIRA vulnerability maps & include carceral facilities on them
	2	3. OEMs should help carceral facilities ID local risks beyond the routine
	1	4. OEMs should include carceral execs in exercises
	2	5. Have a media plan
RQ2 & 3	1	6. Employee Hurricane Packets are a model for others
	3	7. Practice inmate evacuation during maintenance
	2	8. Make an evacuation decision early
	4	9. Have access to sufficient power for shelter in place operations
	2	10. Use inmate labor as a response and recovery asset
	1	11. Place an inmate liaison at the Incident Command Center
	3	12. Use & expand virtual platforms for evacuated inmate legal services
	4	13. Use carceral staff of impacted jails elsewhere
	3	14. Evacuate inmates by housing unit
	4	15.Plumbing modifications help make shelter in place operations sustainable
	4	16. Jails with multiple funding sources have greater resources for preparation & response
RQ4	1	17. Carceral executives should be creating and using a disaster guide
	4	18. Carceral executives should share disaster guides
RQ5	1	19. OEMs should initiate contact with carceral entities
	2	20. Carceral execs should recognize the OEM as a partner in disaster readiness
	2	21. OEM expertise should be used to improve carceral disaster operations
	2	22. OEM situational awareness of carceral disaster evacuations is needed
	3	23. Carceral execs should collaborate with the OEM to strengthen their understanding of WebEOC
	4	24. The disaster AARs of OEMs and carceral organizations should include each other
RQ6	3	25. Carceral disaster preparedness should be enforced by an outside agency with the authority to do so.
	3	26. Movement of inmates between jails during disasters is best facilitated by the state's DOC
	3	27. Inmate evacuation tracking needs to improve
	4	28. Carceral facilities can use COVID techniques to reduce headcount pre-impact
	4	29. Carceral entities must more effectively share best practices
	4	30. How carceral execs define a successful disaster response needs updating
	3	31. Successful carceral disaster response demands overcoming JMS interoperability problems

Table 5: Summary of recommendations by RQ

CHAPTER VI

CONCLUSION

Introduction

This chapter concludes the study by summarizing the key research findings in relation to the

research questions, as well as clarifying and reaffirming the value and contribution thereof. The

study's limitations and proposed opportunities for future research will also be discussed. This

study aimed to critically evaluate carceral facilities preparedness for and response to routine,

slow-onset hazards. This includes determining (1) what are stakeholders doing, or not doing, to

prepare carceral facilities for predictable, slow onset disaster; (2) what have been some of the

methods of dealing with routine disasters that have yielded successful outcomes; (3) what

problems were encountered in making this happen; (4) to what extent are carceral administrators

aware of and using the NIC guide, or any others; (5) to what extent are LE and carceral

administrators collaborating with the EM professionals in their jurisdictions and (6) to what

extent must carceral facilities modify their disaster operations.

Interviews with 41 carceral and EM administrators where slow-onset hazards routinely impact

jails and prisons in the US Gulf Coast, Southwest, and Northwest were conducted and analyzed.

Indeed, thousands of impacted inmates were evacuated or sheltered in place during 2020-2021.

However, little is known about what planning preceded this, how it was accomplished, and what problems were encountered which demonstrate the need for this study and research area. The findings indicate that carceral disaster operations in the sampled jurisdictions varied widely, as will be discussed herein.

Key Findings

Carceral facilities are not seen as an emergency management concern

From planning to response and recovery, carceral administrators and EMs do not see a role for EM in carceral disaster operations. Although the disaster preparation and response of these two occur at the same time (parallel), they do not overlap (synchronous) (Berlin & Carlstrom, 2011). Participating carceral organizations view their OEM counterparts as unhelpful with the practical needs of their disaster operations and unconcerned with the goings on in the jail or prison. When carceral organizations decide to evacuate or shelter in place, they do so independent of the OEM. There is no consultation with OEM regard what to do or when to do it. The autonomy of jails and prison disaster operations does not trouble the OEM because they share this view. Indeed, carceral entities are not listed in any sampled THIRA documents nor are they included in disaster exercises.

Carceral executives should be creating, using, and sharing disaster guides

Rather than using a premade disaster guide or creating their own, carceral administrators in these high-risk regions rely on staff institutional knowledge developed through repeated exposure to the same hazards. This is problematic because when staff left the organization, their knowledge went with them. As there is little documentation recording disaster actions, there is limited sharing of disaster best practices between carceral entities. The National Institute of Corrections and the National Sheriff's Association are intended as a clearing house for carceral information but this does not occur for disaster operations. This is lamented by carceral administrators who feel they

could benefit greatly from the disaster experiences of their counterparts. However, these same administrators struggle to document or share their own best practices.

Interoperability is a problem

This is true for joint carceral disaster operations and jail-to-EM interaction. Interoperability between carceral entities is limited because of incompatible jail management software (JMS). Information sharing between impacted and host facilities is reduced to an ineffective paper-based and email approach. This includes inmate legal status, demographic information, medical condition, and housing assignment. Additionally, lack of a common JMS makes inmate tracking during an evacuation problematic. Interoperability is also constrained between carceral organizations and OEMs. However, a knowledge deficiency rather than a technical one is to blame. Carceral administrators are unaware of, or unfamiliar with, the capabilities of WebEOC and its role in general disaster operations. This shortfall prevents wardens and jail commanders from tapping the resources available to them through the OEM. Improving this knowledge can help make heretofore unknown resources available to carceral executives and promote a relationship with the OEM. This is because WebEOC account holders are typically OEM employees.

How carceral disaster success is defined needs revision.

Carceral administrators describe a successful disaster operation in terms of meeting the first two tiers of Maslow's basic human needs - physiological and safety - as well as preventing escapes. However, findings reveal that true success also includes maintaining inmate tracking throughout the disaster, providing adequate wraparound services, having sufficient funding, and achieving isomorphic learning. Without these additional metrics, the risk to public safety is greater, wraparound services suffer, funds are severely depleted, and best practices are not shared.

Contribution to Knowledge

The operations of carceral facilities surrounding slow-onset hazards have been covered in darkness. Little prior research has addressed how jails and prisons prepare for, respond to, and recover from disaster. This study takes a step toward illumination using in-depth interviews with emergency managers and carceral administrators who lived through disasters in 2020-2021.

The findings herein light a candle in the carceral disaster darkness in the form of 31 posited recommendations. These encompass best practices and opportunities for improvement. Emergency managers and carceral administrators can use these to help make more informed decisions, reduce human suffering, lessen operational chaos, and better prepare for the next hazard. The posited recommendations are informed by pragmatism, therefore, if they are operationalized, they can help advance carceral disaster preparedness and OEM collaboration. Broadly speaking, these 31 recommendations (see Table 4 above) cover the need for (1) EM involvement in carceral disaster operations, (2) synchronous collaboration, (3) enhancing interoperability and (4) redefining success.

This study makes a - much needed - contribution to the EM and correctional literature on carceral disaster readiness by providing insights as to current local carceral disaster operations and the perceived roles surrounding routine slow-onset hazards. The synthesis of EM and carceral administrators regarding their disasters experiences contributes to our understanding of how these facilities are presently coping and what can be done to help them prepare for the future.

Limitations

The 41 interviews of emergency managers and carceral administrators were drawn from three US regions where the same slow-onset hazards have an impact on the population year after year. Given the sample size, it is acknowledged that the findings are not representative of or generalizable to the entire country (Maxwell, 2002). However, the population size of carceral

facilities exposed to routine, slow-onset, hazards is much smaller thus the findings are more

applicable for this group. Considering the size of the target population for this qualitative study,

the sample size was carefully weighed to achieve the study's aims. Indeed, Patton (2002) argued

that "sample size depends on what you want to know, the purpose of the inquiry, what's at stake,

what will be useful, what will have credibility, and what can be done with available time and

resources" (p.244). Although not faced with routine slow-onset hazards, all regions of the country

experience hazards in some form and could benefit from carceral disaster isomorphic learning.

Samples were drawn from state and county level OEMs and adult carceral entities that had

experienced a routine disaster in 2020-2021. No carceral facilities within the federal BOP were

included nor were emergency managers associated with FEMA. Juvenile detention facilities were

not included in the purposive sample although they must prepare for and respond to disasters as

well. As a result, this study's findings and recommendations cannot be generalized to either the

federal or juvenile carceral systems.

Interviews were intended to be conducted using Zoom to allow the PI to view interviewee's body

language (Creswell, 2016). More than half had to be conducted via phone because of the

technical or availability constraints of interviewees. However, this did not lessen the quality of

the data or thwart the aims of the study (Ravitch & Carl, 2021).

Future research

More research is needed incorporating the carceral systems of other nations and rapid-onset

hazard preparedness. Future carceral disaster research could also include samples from the federal

level. In their comparison of Hurricanes Katrina and Maria, Dement and McAleavy (2021) found

that Metropolitan Detention Centers - members of the Federal BOP - have been plagued with

poor disaster response and may benefit from further research.

Future studies could approach carceral disaster from the inmate point of view. This study explored how carceral executives and emergency managers prepare for and respond to the impact of slow-onset hazards on jails and prisons. Understanding the experiences of the impacted inmates would add a valuable - and relatively unexplored - perspective. The press has published a few inmate accounts of disaster but there is currently no empirical research. Addressing this gap in the literature would require careful ethical consideration and adherence to the requirements of the IRB. Furthermore, the role of an inmate liaison in the Incident Command System (ICS) needs to be studied in greater depth. All sampled regions use inmate labor in some form throughout the disasters phases. It is unclear who represents this labor in the ICS, how they are integrated into the command structure, and how often they are included. Future research could determine how this happens through a mixed methods approach of interviews and surveys directed toward OEMs and carceral executives.

Best practices around the use of inmate labor in disasters needs further study as most state planning documents include some reference of inmate labor during times of disaster (Purdum & Meyer, 2020). Although not the core focus, this study's findings highlighted several methods for the effective use of inmate labor during disasters at both the county and state level. Which of these is most cost-effective, what are the supervision requirements, and how inmates are selected for participation are all areas in need of research. Moreover, work release programs can produce cost avoidance benefits while reducing recidivism (Duwe, 2014) but it is unknown if using inmate labor for disaster purposes may be a bridge to work release.

Future studies could study the extent to which OEMs nationwide are including carceral facilities in their THIRA. This study indicated that not all OEMs have a THIRA but those who do are not including carceral facilities. It is unknown to what extent this is occurring outside the sampled regions.

An international comparison of carceral disaster operations is a logical future step. The rise in frequency and scale of hazards demands more anticipation and better preparation around the globe (Hore et al., 2018). The governments of many nations are more centralized than the US which may provide lessons on the advantages of standardization and interoperability. What is learned about the preparedness of carceral systems from other nations can be shared to improve the preparedness of all.

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APPENDICES

APPENDIX A

Interview questions

1. In general, how would you define your role in the (insert name here) organization? For how long?
2. What disasters have you been a part of professionally?

3. What collaboration did you observe in the preparation and response phases?

4. What preparation happens for recurring disasters?

5. What has made your orgs response to disaster a success?

6. What can be done to improve it?

7. What variables drive the decision to evacuate or shelter in place?

8. Are there others outside your org who play a role in this decision?

9. How do they influence disaster decisions?

10. When sheltering in place, what has to be done?

11. To what extent are disaster responses rehearsed in your org?

12. How would you describe your org's recovery process from a disaster?

13. How does your org pay for inmate evacuations? Housing in other jurisdictions?

14. How has COVID-19 impacted your org's disaster planning, response, & recovery?

15. How does the org capture lessons from disaster? Who does it share these with?

Zoom related questions

1. What did you like or dislike about using Zoom for an interview?

2. Based on your zoom experience, would you be willing to participate in zoom interviews in the future?

3. Do you have any suggestions for improvement when using Zoom for interviews?

Fire and Emergency Management

CONSENT FORM

Carceral facilities and disaster

Background Information

You are invited to be in a research study of carceral facility response to disaster. We ask that you read this form and ask any questions you may have before agreeing to be in the study. Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time. You can skip any questions that make you uncomfortable and can stop the interview at any time. Your decision whether or not to participate in this study will not affect your employment.

This study is being conducted by: Carl Dement, MA, School of Criminal Justice, University of Central Oklahoma, under the direction of Tony McAleavy, PhD, Fire and Emergency Management Program, Oklahoma State University.

Procedures

If you agree to be in this study, we would ask you to do the following things: Participate in a one on one interview via Zoom lasting no more than an hour. You will be contacted to arrange a meeting time at your convenience. Once a date and time are selected, you will be sent a link to the meeting. The zoom interview will be recorded and saved to a local hard drive accessible only to the lead researcher. It will be destroyed once analysis is complete which is estimated to be in March 2021 using software designed for this purpose. You will be assigned a code to maintain your anonymity. The master code list will be saved to a local hard drive then erased using the same data wipe software once transcription is complete.

Participation in the study involves the following time commitment: The Zoom interview will last no more than an hour. If you believe more time is needed, a later interview of the same length can be scheduled. This is intended to be mindful and respectful of your time.

Confidentiality

The information that you give in the study will be handled confidentially. Your information will be assigned a code number/pseudonym. The list connecting your name to this code will be kept

on a local hard drive accessible only to the lead researcher. When the study is completed and the data have been analyzed, this list will be destroyed using special software designed for this purpose. Your name will not be used in any report. Your identity will not be revealed in any publications, presentations, or reports resulting from this research study.

We will collect your information through a zoom based recorded interview. This recording will be stored on an external hard drive accessible only to the lead researcher. When the study is completed and the data have been analyzed, the code list linking names to study numbers will be destroyed. This is expected to occur no later than March 2021. The audio/video recording will be transcribed. The recording will be deleted after the transcription is complete and verified. This process should take approximately three months.

Contacts and Questions

The Institutional Review Board (IRB) for the protection of human research participants at Oklahoma State University has reviewed and approved this study. If you have questions about the research study itself, please contact the Principal Investigator at 405.974.5831, or cdement1@uco.edu. If you have questions about your rights as a research volunteer or would simply like to speak with someone other than the research team about concerns regarding this study, please contact the IRB at (405) 744-3377 or irb@okstate.edu. All reports or correspondence will be kept confidential.

Statement of Consent

I have read the above information. I have had the opportunity to ask questions and have my questions answered. I consent to participate in the study.

Indicate Yes or No:

I give consent to be videotaped during this study:

    ___Yes ___No

I give consent to be contacted for follow-up in this study or future similar studies:

    ___Yes ___No

If you agree to participate in this research, please click I Agree to continue.

APPENDIX C – Theme Development

Code	Category	Theme
Vulnerable Population	THIRA/HVRA	Carceral facilities not seen as EM concern
Disaster Frequency		
Natural Disaster		
Manmade Disaster		
EM exercise	Training & Exercise	
Corrections exercise		
Corrections training		
Guide use		
EM decisions	Decision Making	Parallel but not Synchronous Collaboration
LE decisions		
Political decisions		
Media issue		
Inmate laborers	Jail as resource	
Laundry		
Kitchen		
Generator Power		
Water		
Collaboration cycle	Collaboration w/ EM	
Synchronous Col		
Parallel Col		
ESF 13 crossover		
Civilian tracking	Evacuee tracking	Interoperability
Inmate tracking		
Manifest		
NMETS - FEMA		
Emtrack - Juvare		
JMS	Tech Usage	
WebEOC awareness		
Virtual meetings		
Impacted transport	Transportation	
Host transport		
DOC transport		
3rd Party Transport		
Sec Escort		
Staggered arrive/depart		
En Masse arrive/depart		
Inmate Sec	Security	Successful end-state
Staff Sec		
Public Safety		
Jail construction	Shelter in place	
Supplies		
Generators		
Staffing		
Plumbing (Valves & Hookups)		
Food	Wraparound	
Water		
Medicine		
Bed space		
No deaths		
Access to legal		
COVID impact		
Staffing		
House outside inmates	Funding	
FEMA reimbursement		
Earmarked Taxes		
Contract/MAA		
Jail products		
Grant potential		
Internal AAR	Isomorphic Learning	
External AAR		
Disaster Frequency		
Region difference		

APPENDIX D – Institutional Review Board Approval Letter

**Oklahoma State University Institutional
Review Board**

Date:	04/06/2021
Application Number:	IRB-21-121
Proposal Title:	Carceral evacuations in disaster
Principal Investigator:	Carl Dement
Co-Investigator(s):	
Faculty Adviser:	Tony McAleavy
Project Coordinator:	
Research Assistant(s):	Haley Murphy
Processed as:	Exempt
Exempt Category:	

Status Recommended by Reviewer(s): Approved

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in 45CFR46.

This study meets criteria in the Revised Common Rule, as well as, one or more of the circumstances for which <u>continuing review is not required.</u> As Principal Investigator of this research, you will be required to submit a status report to the IRB triennially.

The final versions of any recruitment, consent and assent documents bearing the IRB approval stamp are available for download from IRBManager. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be approved by the IRB. Protocol modifications requiring approval may include changes to the title, PI, adviser, other research personnel, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any unanticipated and/or adverse events to the IRB Office promptly.
4. Notify the IRB office when your research project is complete or when you are no longer affiliated with Oklahoma State University.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact the IRB Office at 405-7443377 or irb@okstate.edu.

Sincerely,

Oklahoma State University IRB

VITA

Carl E. Dement Jr.

Candidate for the Degree of

Doctor of Philosophy

Dissertation: TO STAY OR TO GO? A CRITICAL EVALUATION OF CARCERAL
        OPERATIONS IN SLOW-ONSET DISASTERS

Major Field: Fire and Emergency Management Administration

Biographical:

        Education:

        Completed the requirements for the Doctor of Philosophy in Fire and
        Emergency Management Administration at the Oklahoma State University,
        Stillwater, Oklahoma in May, 2022.

        Completed the requirements for the Master of Arts in Criminal Justice at the
        University of Central Texas, Killeen, Texas in 1997.

        Completed the requirements for the Bachelor of Arts in Criminal Justice at the
        University of Central Missouri, Warrensburg, Missouri in 1994.

        Experience:

        Full time lecturer in the School of Criminal Justice at the University of Central
        Oklahoma from Aug 2016 to present. Private sector operations manager from
        1998 to 2016. Platoon Leader in the United States Army Military Police Corps
        from 1994 - 1998.

        Professional Memberships:

        International Association of Emergency Managers from 2020 to present.
        Oklahoma Criminal Justice Association from 2016 to present.