

MuseumsForward

Understanding the impact of COVID-19 on museum and library disaster preparedness and response

Chanelle E. Geveshausen

Abstract

The museum field and the nonprofit world were greatly impacted by closures during the Coronavirus pandemic in 2020. In response, museums are rethinking how to best mitigate the harmful effects of future disasters like COVID-19. The purpose of this research study was to examine the ways in which museums and libraries are retooling their disaster preparedness plans post-COVID. This research study used a descriptive case study design that included data acquired through questionnaire responses and facilitated interviews with museum professionals across three institutions. Results suggest that museum and library staff are having to explore and document creative solutions to various concerns including but not limited to vendor shipping changes; evolving CDC recommendations; lost social connections; and lost access to museum objects due to safety protocols. Results identify two affordances in case study sites' disaster planning: clear communication procedures and disaster response committees. Three constraints were identified around the problem of the institution being closed for an unexpectedly long period of time, including documentation problems, communication problems, and business continuity planning problems. As a result, collaboration and communication are at the forefront of these three case study institutions' approach to retooling their disaster preparedness plans to better address situations like the COVID-19 pandemic. This case study may be significant to practitioners with the museum, cultural, nonprofit, education, and hospital fields to better understand current models and practices of disaster response planning before and during the COVID-19 pandemic.

Keywords

Emergency response; disaster preparedness planning

Committee Chair

Dr. Jessica Luke

Committee Members Dr. Marion Eberly; Stephanie Mohr

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Introduction

COVID-19 has created immense stress on museums' financial stability. In an American Alliance of Museums (AAM) survey conducted in October 2020, museum directors reported that over half (52%) of museums had six months or less of operating reserves and 82% had twelve months or less of operating reserves (AAM, 2020b). While not the only disaster to impact museums over the past decade, COVID-19 is a challenge unlike any before it.

In March 2020, the World Health Organization declared the COVID-19 outbreak a global pandemic and posed an unprecedented challenge to public health, social, and economic sectors (World Health Organization, 2020). The COVID-19 pandemic caused 90% of museums, more than 85,000 institutions globally, to shut their doors to the public which resulted in many short- and long-term consequences that are still being navigated (UNESCO, 2020). With US museum doors being shut for an average of 28 weeks, 60% of programs were cut, 40% of operating income dropped, and 66% of institutions laid off and furloughed staff members, and buildings and objects were left unattended for extended periods (Dafoe, 2021).

Following disastrous events such as COVID-19, the September 11th attacks, and Hurricane Katrina, there has been growing investment in disaster preparedness advancement and increased community participation in planning (Khan, 2011). This article describes a research study designed to examine the ways in which museums are retooling their disaster preparedness plans post-COVID-19.

Disaster Management

Disaster management is defined by The International Federation of Red Cross & Red Crescent Societies as "the organization and management of resources and responsibilities for dealing with all the humanitarian aspects of emergencies, in particular preparedness, response and recovery, in order to lessen the impact of disasters" (IFRC, n.d.). A preparedness plan is a tool that helps establish timely, effective,

and appropriate responses to disaster situations (UNDRR, n.d.). These plans are used in various sectors and continue to evolve to be responsive and adaptable to future disasters (Mandel-Ricci, 2021).

Museums have been urged over the last decade to incorporate disaster plans into their planning documents and such plans are now a requirement of the AAM accreditation process. Having a strong disaster plan helps museums to care for its collection, physical and online space, staff, and the community in the event of an emergency. However, Heritage Health Index reported that in 2014, 42% of museums had disaster plans in place (The Institute of Museum and Library Services, 2019). In a smaller study conducted in 2016, 68% of respondents affirmed that they had some form of a disaster plan in place, demonstrating a potential increase in disaster plans over the decade (Benson, 2016).

Although disaster plans are becoming a standard practice, there is a need to re-examine their efficiency as they act as living and evolving documents. AAM is urging museums to revisit and revise disaster preparedness in the times of COVID-19 to cover constraints that arose after the plan's application, such as managing extended closure and incorporating continuity of operations (AAM, 2020a). As museums continue to navigate the pandemic, growing bodies of literature show that museums are rethinking how to best navigate future disasters. By researching and documenting the ways in which museums are retooling their disaster plans post-COVID, these documents can serve as resource for institutions looking to implement disaster planning strategies and develop best practices.

Disaster Plans in Museums

A Disaster Preparedness and Emergency Response Plan is a Core Document within AAM's Facilities and Risk Management Core Standards which incorporates mitigation and response planning (AAM, 2017). Both AAM and National Park Services (NPS) provide handbooks for emergency planning specific to the museum field that offer guidance but generally lack consistency in their planning models. NPS's *Museum Handbook, Chapter 10: Emergency Planning 2019* includes scenarios, checklists, and action items involving object materials, including both all-hazard and scenario-based methodologies (National Park Services, 2019). In comparison to AAM's document *Developing a Disaster Preparedness/Emergency Response Plan*, training and assessment are not mentioned, leaving the proposed plan more rigid and stagnant, leaving those who only implement this model to

potential “paper plan syndrome,” giving the illusion of preparedness (McGlown & Robinson, 2011). Both AAM and NPS provide additional resources for institutions in their documents but reference different sources, furthering a disconnect within disaster planning in the museum field.

As a result of the pandemic, there has been an increase in published articles around COVID-19 scenario strategies which aim to create familiarity with the disaster plans between staff. One author of AAM’s TrendWatch report suggests that responding to the unfolding pandemic can be overwhelming and by partaking in scenario-based planning and training, it can help lower personal and institutional anxiety levels (Merritt, 2020). Through literature emerging throughout the pandemic, collaborative and scenario-based planning is becoming more standardized both in the museum as well as falling in line with standards already implemented in hospitals, schools, and at a national level.

Disaster Plan Models

Disaster planning models differ between fields but referring to various models can be a valuable resource for any institution thinking about disaster response and strategies. Hospitals and public schools have long established and extensive emergency planning models that are widely shared and inform disaster planning in other fields. While both hospitals and schools certainly faced challenges during the COVID-19 pandemic, there is much to learn from the shared language and general commonalities of their disaster plan models that can benefit fields beyond their silos.

For context, Incident Command System (ICS) was developed by an interagency group FIRESCOPE for managing wildland fires in California in the 1970s (Stambler & Barbera, 2011). ICS standardized the response to fires using resources from partnered agency organizations, which proved to increase efficiency and safety. School Emergency Operations Plans uses concepts and principles of the ICS to standardize vocabulary, processes, and approaches to align with the Federal Emergency Management Agency (FEMA) and the US Department of Education (*Guide for Developing High-Quality School Emergency Operations Plans*, 2013). Similarly, The ICS was adopted as a key management tool in small and large hospitals as an all-hazards planning method (McGlown & Robinson, 2011).

In a case study examining emergency preparedness policy and practice in Massachusetts hospitals following 9/11/2001, it was concluded that ICS training and practice were “important facilitators in effective incident response” (Taschner et al., 2017, p. 132). The Workplace Health & Safety ICS common language, common roles, and chain of command contributed to better understanding between partners. A nurse informant stated, “As ICS was utilized during incident response over a period of time and incorporated into hospital practice, the benefits became apparent” (Taschner et al., 2017, p. 133). One study focused on interactive Mass Casualty Incidents (MCI) curriculum, another all-hazards method and “trainee-specific emergency preparedness plan” for emergency medicine residents to have an active role in both the design and implementation of the new resident integrated disaster management plan (Walker et al., 2020). There was a consensus of increased interest, retention, and comfort level in both management and participation in MCI scenarios (Walker et al., 2020). Both studies claim that through all-hazard interactive training, better collaboration and preparedness were reported.

Literature suggests that while all-hazards planning is effective, scenario-based planning should supplement preparedness and response plans:

“When a disaster reaches catastrophic proportions, covering many jurisdictions, dissimilar response plans may make it difficult to conduct a coordinated response. Multijurisdictional, scenario-specific catastrophe response planning can significantly decrease the conflicts and inefficiencies that would otherwise exist” (Ruback, Wells, and Bissell 2009, p. 5).

Being inclusive of all-hazard and scenario-based models, comprehensive emergency management (CEM) was implemented in the hospital field (McGlown & Robinson, 2011). CEM has two primary plan categories: preparedness and response. Preparedness plans include resource management, training and education, and exercise and evaluation plans. Response plans include the emergency operations plan (EOP) and business continuity plans (BCPs) (McGlown & Robinson, 2011). A FEMA guide for schools from 2013 includes a template for a basic plan, functional annexes content, and threat- and hazard-specific annexes (*Guide for Developing High-Quality School Emergency Operations Plans*, 2013). Disaster planning documents in both the health and education fields rely on collaborative and dynamic

models in their management and share common vocabulary and reference documents.

Study Purpose

The purpose of this research study was to examine the ways in which museums and libraries are retooling their disaster preparedness plans post-COVID. The study was guided by two key research questions:

- 1) What do museum and library leaders feel were the affordances and constraints of their disaster plans in addressing COVID-19?
- 2) In what ways are museums and libraries retooling their disaster preparedness plans to better address situations like the COVID pandemic?

Methodology

This research study used a descriptive case study design which analyzes qualitative data *within* each situation as well as *across* situations (Yin, 2009). Data were collected through questionnaire responses and facilitated semi-structured interviews with museum professionals across three institutions.

Sampling

Three case study sites were selected using purposive sampling to ensure relevancy to the research questions. Museums designated as sites for research met the following inclusion criteria:

- Located in the greater Seattle area and have implemented changes to the institution's disaster plan since the COVID-19 pandemic; and
- Participants in a leadership or operational role and knowledgeable in the decision process of disaster planning at the institution.

Prospective sites were identified through active recruitment, including social media postings, and directly emailing medium sized institutions in the Pacific Northwest region. Institutions' names have been anonymized for this study but are broadly described below.

Site One is a large-sized, non-profit history museum. Prior to the COVID-19 pandemic, the institution had two paper plans. The first was an Emergency Response Plan that encompasses the facility plan for how to deal with situations that range from earthquakes to lost children.

The second was a Collection Plan that addresses salvaging artifacts. The institution also had a Collection Resource Team in place prior to the COVID-19 pandemic.

Site Two is a mid-sized, non-profit art museum. The institution's disaster planning prior to the pandemic included a paper disaster plan and a resource list.

Site Three is a large-sized, university-affiliate library. Prior to the COVID-19 pandemic, the institution had two paper plans, including a Library Collections Disaster Plan that focuses on immediate response to collections hazards, and an Emergency Evacuation Plan for each library building that provides instructions for evacuation.

In identifying participants from each site, interested museum staff asked their colleagues and connected them to the researcher through email. Ultimately, five interviews were conducted, and four questionnaires were collected and analyzed for the study. The job titles of questionnaire respondents and interviewees included the following: Chief Registrar, Head of Collections, Director of Preservation Services, Curator of Collections, Director of Event Services, Facilities Manager, and Manager of Security Services.

Data Collection

Data for the study were collected through semi-structured interviews and questionnaire responses. Given the impact on public health that COVID-19 had at the time of data collection, remote interviews were conducted to ensure the safety of the participants and researcher. Interviews lasted approximately thirty minutes and were recorded using Zoom video conferencing software and transcribed to ensure data validity. An interview guide (see Appendix A) was used to lead participants through a series of questions relating to the state of the institution's disaster preparedness plans both before and during COVID-19, and thoughts on future preparedness. While the interview focused primarily on personal responses, the questionnaire (see Appendix B) aimed to gain a deeper understanding to institutional responses through open-ended qualitative questions. Distributing questionnaires allowed for additional staff to collaborate to answer institutional knowledge questions to the best of their ability. Questionnaire respondents generally provided full information in their responses. These methods combined allowed for a holistic understanding of disaster planning at the institution.

Data Analysis

All data obtained from interview transcripts were analyzed comparatively to reveal any emergence or divergence in the data that pointed to common practices around disaster preparedness between institutions. Qualitative data from interview transcripts and questionnaires were analyzed to identify common themes through identifying keywords, phrases, and ideas to see patterns in responses.

Results

The following section summarizes the results of this qualitative, multi-site research case study. Organized by research questions, analysis is articulated through themes.

1. What do museum and library leaders feel were the affordances and constraints of their disaster plans in addressing COVID-19?

Affordances

Overall, participants did not have positive feelings around how their institution's disaster plan addressed COVID-19. However, participants at two of the three case study sites identified two affordances in their disaster preparedness plan that helped them navigate COVID-19. These affordances centered on two particular themes: a) communication; and b) disaster response committees. Case study sites identified that having communication procedures and disaster response committees in place led to the appropriate staff to be called upon in addressing COVID-19 and offered reassurance that there were steps the institution could take in their pandemic response.

a) Communication. Participants at two case study institutions felt that their disaster preparedness plans helped them to develop clear communication protocols when dealing with COVID-19. They described their communication protocols as including things like contact information for the emergency response team, phone trees, and/or PReP™ plans (a pocket-sized emergency contact directory and checklist). They felt that these articulated procedures helped them deal with COVID-19 because it allowed for staff to communicate effectively, at times when limited staff were allowed in the facility. One participant from Site Three described the affordance like this: "I think we had enough in our disaster plan to enable our facilities manager to respond when we weren't allowed on campus." Another participant shared that

in a flood incident during the COVID-19 extended closure, the facility manager was able to refer to the contact information listed on the disaster plan poster:

“Staff call the numbers on the poster to reach the Collections Disaster Team as needed... During the pandemic, when staff were instructed to work from home, we had two collections emergencies. Thankfully we had one Libraries Facilities staff member onsite during the pandemic who regularly walked all of our buildings to make sure they were safe and secure. They encountered two leaks during the pandemic and called the chair of the Collections Disaster Team on their personal cell phone.”

Staff on the Emergency Call List at Site One were distributed universal keys as part of the institution’s disaster plan prior to the pandemic. They felt that this procedure helped the institution establish who would check on the facilities during the extended closure. One interviewee spoke to the affordance of having communication procures by saying, “People who actually were supposed to be on site of the disaster were the ones who were allowed to be in the building. So yes, that did apply to the disaster plan.”

b) Emergency Response Committees. Two of the three case study sites identified that having an emergency response committee established prior to the pandemic helped their institution navigate COVID-19. These committees included staff representation from various departments to discuss facility maintenance and mitigation of disaster situations. Participants at these two case study sites felt that emergency response committees allowed for institutions to collaborate and address staff concerns around social distancing, develop new responsibilities such as checking vaccinations of guests, and create de-escalation protocol. One interviewee from Site One described this affordance by saying,

“Those of us who had sort of worked with the emergency response plan the most were called upon to help devise the museum's response to the pandemic. How were we going to address it? How we were going to cope with, you know, staff and their feelings and how we were going to address the public... and all those kinds of things. So, it was helpful in that regard. It was reassuring.”

As mentioned in the Communication section above, Site Three's Collections Disaster Team was called to respond to a small-scale collections emergency and one questionnaire respondent felt that having an established Collections Disaster Team allowed for a timely response during COVID-19. In their own words, they shared,

"Three Preservation Department staff members who live closer to [the institution] and who were willing to respond with COVID protocols and PPE were asked to go onsite. They worked with the Facilities staff member to respond and materials were again identified and sorted for immediate response (air-drying vs. freezing)."

Constraints

While all institutions had disaster plans in place ahead of the pandemic, interviewees unanimously did not feel that the institution's disaster plan was adequate in addressing institutional needs during COVID-19. Institution's disaster plans fell short because they did not anticipate or plan for a year-and-a-half long extended closure. One interviewee spoke to the extended closure being something unexpected: "It's a real mind shift. It isn't about, 'Oh, disaster happened, react, do this or that.' It's more like the long-term management of the situation. So now, we weren't prepared for that." Three constraints were identified centered around the problem of the institution being closed for an unexpectedly long period of time: a) documentation problems; b) communication problems; and c) business planning problems.

a) Documentation Problems. All three institutions identified that not having documentation that addressed extended closures was a constraint in the application of their disaster plan during COVID-19. The case study sites felt that the institution did not have an understanding of the relationship between an infectious disease like COVID-19 and prolonged closure. A questionnaire response from Site One described this barrier:

"COVID-19 was unlike anything we had outlined in the disaster plan. Most of the plan was around emergencies when people or objects were in immediate danger. This pandemic was a slow disaster. Everything was ok in the short term, but as it stretched and kept changing, we had to adapt our procedures and protocols in ways we hadn't expected."

In response to the same question, a respondent from Site Two wrote, "There was a short section about infectious disease in the disaster plan, but it was very limited in dealing with the Coronavirus pandemic." Extended closures related to infectious disease were not given the same amount of thought in relation to closures in volcanic ash and snowstorm scenarios. Even sections of the plan that addressed museum closers did not address extended closures in a way that was beneficial to addressing concerns that arose during COVID-19.

Institutions did not have the foresight to prepare for a disaster of COVID-19's magnitude, resulting in a hollow section of their preparedness plan that wasn't helpful in responding to the pandemic. One interviewee from Site One described the constraint of their documentation during COVID-19 by saying, "I think that none of them spoke to this kind of an emergency... The general plan was for fast emergencies, which is usually what we think of and then the collections plan is specific to salvaging artifacts in an emergency. And so, neither of those really spoke to what the issue was."

Analysis of a published poster-version of Site Three's disaster plan, which is made available to all institution staff, reiterated the types of disasters the institution's plan hoped to mitigate. Procedures in this document were focused on fast responding lock-down or evacuation related disasters, for example steps include: "Go to Evacuation Assembly Point (EAP) listed in the evacuation plan and/or emergency evacuation signs for this building." For a hazardous materials release, the plan states: "If an emergency or if anyone is in danger, call 9-1-1. Move away from the site of the hazard to a safe place." One questionnaire response also spoke to constraints of the institution's disaster preparedness plans document contents not addressing institution needs during COVID-19:

"The Library Collections Disaster Plan focuses on immediate response for collection hazards (water, fire, volcanic ash, earthquake, mold, and other structural damage) so it did not address continuity of operations or situations like the COVID-19 pandemic. The Emergency Evacuation Plan provides instructions for evacuating buildings during an emergency."

b) Communication Problems. Participants at all three case study sites did not feel that their disaster plans adequately addressed communication needs during the pandemic. They felt that this was a hinderance to their pandemic response because it created confusion and slowed down regular collection care maintenance. Institution

communication problems included: consistent communication practices, up-to-date contact lists, and clarity on who had facility access during the extended closure. One participant from Site Two described the confusion caused by a lack of consistent communication practices during the pandemic:

“In the early days everyone was working from home but if you needed to come in the building, you didn’t know who or how to tell that you are symptom-free. And then it became this thing think of text your supervisor and then they text their supervisor up to the director. And it was always kind of changing around. It would be helpful if those were already recorded in the disaster response plan so that we could just flip to and let’s say this happens again in 10 years. What did we do then and not have to just reinvent it all again?”

A questionnaire respondent from Site Three echoed communication issues, but around out-of-date contact lists. In their response they wrote, “Yes, it is updated every few years and the contact list is updated more frequently. There has been so much turmoil and staff turnover during the pandemic that it currently needs to be updated significantly.”

Staff turnover during COVID-19 also led to communication gaps at Site One. One interviewee shared that there was confusion around responsibilities due to strict access regulations and furloughing staff. This led to less-than-ideal collection care practices during COVID-19. In their own words, they gave an example of this constraint:

“A lot of us collection staff weren’t even allowed in the building, so they had to rely on their facilities people. We had a rotation of people that would come in to check the building, and one of them was a collections person... We did have a period where certain staff were furloughed, which some of them were collection staff. One of my colleagues who does the integrated pest management and does a lot of check-ups and things was. And so, there were times when I was going around picking up bug traps and being like, ‘I don’t know if she was the one that did this.’”

c) Business Continuity Problems. Participants at Site Two and Site Three felt that their disaster preparedness plans lacked business continuity planning. None of the case study institutions had continuity

plans at the time of this study. They felt that this hindered them in mitigating COVID-19 issues around how to keep staff employed and collections cared for. An interviewee from Site Two described the constraint:

“The majority of what the disaster plan lacked was what is referred to as a business continuity plan...I think that needs to be a standard component of any disaster response plan, really. Because unless it's just, you know, we had a pipe break and we're dealing with it sort of thing. If it's anything beyond, you've got to think about closing to the public, closing to staff. How do we keep the bills being paid? How do we pick up the mail? How do we get salaries time?”

Participants from Site Three also addressed how not having a continuity of operations plan was a hinderance in mitigating issues during COVID-19. One interviewee shared their thoughts on this constraint at their institution:

“It probably would have lessened some of those decision points... so whenever we get around to doing those continuity of operations plans, which will happen kind of at the library's administrative level with our facilities manager. I'm sure they'll document a lot of this experience to help build that out for the future.”

A questionnaire respondent from the same site touched on the institution's lack of continuity plan: “We are aware that documentation of procedures/operations is critical to allow for continuity of operations over time and aspire to do more in this area.”

2. In what ways are museums and libraries retooling their disaster preparedness plans to better address situations like the COVID pandemic?

External Collaboration

While all three of these institutions are at different points in the re-tooling of their disaster preparedness plans, they are all utilizing disaster planning networks/groups to inform changes to their disaster planning. All three institutions reported that they were referring to county, state, national government sources such as FEMA, as well as

AAM, Seattle Heritage Emergency Response Network (SHERN), peer institutions, Seattle Public Schools, and other collaborative groups. Cooperative disaster networks or organizations such as SHERN are networks comprised of libraries, museums, and other cultural institutions in their local geographic region. Members of these networks organize to provide advice, share information, organize training, and provide support and recovery assistance. During COVID-19, recommendations from the government and CDC were constantly changing. A questionnaire respondent from Site Three spoke to how these changes impacted their institution:

“Strategies are constantly changing in response to changing community guidelines. For instance, [the institution] (as of mid-April) still requires that museum patrons wear masks while inside the building, which has become more difficult to enforce since the “official” King County mandate has been lifted.”

Members of these networks were able to discuss and coordinate best practices around mask requirements, social distancing, countertop shield barriers, among other recommendations. Interviewees from Site One and Site Two spoke positively about the collaborative growth between institutions at a local scale. One interviewee from Site One shared how collaborative groups helped them think about ways to address COVID-19 at their institution and make sure their plans are in alignment with other organizations:

“It seemed to me like a pretty collaborative time when museums were trying to just know what everyone else was doing. I think it was like, an arts organization/director’s forum where once a month we got together and it’s like, ‘This is what the Opera’s doing’ or ‘This is what SAM is doing.’ because I think there’s a lot of no one knows what to make of some of these recommendations or, you know, they’ll hear something and they’re like, ‘Well, that works for this city, but that’s not really what’s happening here.’”

A separate interviewee from the same site spoke to a similar point. Case study institutions were referring to AAM and the Seattle Public Schools to ensure consistency in their disaster response during COVID-19. This interviewee shared in their own words, “It’s important that our policies and procedures are not completely foreign to these students

coming in. That it seems like, you know, it's a normal continuation of the way things are."

Formal and informal collaborative groups arose because of COVID-19. Museum directors in the Seattle area started organizing formal meetings where they coordinated messaging. Additionally, various regional professional registrar committees and organizations began including vendors in their meetings to discuss navigating shipping changes during the pandemic. During COVID-19, communication between institutions and their vendors grew. An interviewee from Site One described the how vendor communication informed policies:

"You can set up vendor alerts. It's always good to know if you're in the unfortunate event of a larger scale disaster where you're going to have to work with the vendor. It's good to know how they're going to want you to pack materials to go to cold storage and what policies there are, what their processes are, and knowing what services they offer."

One interviewee from Site Two shared the benefit of partnering with other institutions to discuss shipping changes that were described above:

"All of the shipping were so disrupted and so there's a lot of adaptations that have happened within our within our field; some of which I hope will retain even if things go back to quote unquote normal, because I think they help save costs and carbon a lot of them."

One interviewee from Site Two spoke positively to the rise of networks/organizations during the COVID-19 pandemic: "And organizations, yeah, there were already existing professional ones and then other ones, that kind of organically grew. It is one of the nice things about this Zoom phenomenon, right? That was one of the silver linings I think of the pandemic."

Most interviewees reported that collaborative local networks and groups were a supportive tool in thinking about how to re-tool their disaster plan or respond to COVID-19 challenges. These groups allowed for institutions to pose challenges they were facing to get advice on how to re-tool their plans, coordinate messaging to the public, and receive general support in knowing they were not alone in facing challenges.

In their own words, an interviewee from Site Three shared in how SHERN supported their institution in navigating AAM's disaster planning tool: "SHERN is great as well. Sort of as a volunteer group in terms of organizing continuing education on that and allowing us to share what we've learned through different disasters as well or different collection emergencies. That can be really useful local tool." The same interviewee later spoke to how SHERN has been able to help their institution navigate information over-load and act to retooling their disaster plan in response to COVID-19: "I think the big challenge for all of us is to be able to consume that information and then think about how it applies to a particular situation and incorporate that into our planning and risk management."

In a questionnaire response about what resources the institution was looking towards in navigating COVID-19, a participant from Site Three stated, "We always try to be in compliance with AAM best practices, and also share information with our peer organizations."

Internal Collaboration

All three institutions have increased the diversity of staff working on re-tooling their disaster plans. Questionnaire respondents were asked which staff were familiar with their institution's disaster plan prior to COVID-19. Respondents from each institution identified senior collections and security staff as having the most familiarity and interaction. A respondent from Site One wrote, "The Visitor Services and Events teams were all at least aware that it existed." Prior to the COVID-19 pandemic, the emergency response plan was not widely referenced and made familiar at all three institutions. A questionnaire respondent from Site Two spoke to the infrequency of the plan being referred to: "Not sure about prior to 2010, but there was one occasion, around 2015, when senior staff looked it over together, at the urging of the Chief Registrar." In response to the same frequency question, a respondent from Site Three shared, "We have done table-top exercises using the Collections Disaster Plan in the past although not in the last few years."

In contrast to the infrequency of staff involvement prior to the COVID-19 pandemic, all institutions have implemented more frequent communication around disaster planning and included representation from additional departments. Site One told in a questionnaire response that they now have a committee tasked to complete and update their plan: "The committee working on the COVID-19 Incident Response Process is comprised of: the Director of People and Culture (HR), Sr.

Manager of Facilities & Security, Director of Visitor Services, and Director of Events Services." Site One is also pulling in Exhibits and Marketing staff when applicable to ensure consistent messaging in signage and marketing verbiage: "Exhibits had to be pulled in on stuff, obviously, about how they're doing signage. And then also we had to first shift what exactly exhibits we had and what was supposed to be on display in 2020 and all of that kind of stuff." They went on to share more about the increased involvement of internal staff to re-tool the institution's plan during COVID-19:

"Our membership person, who also does work with online ticketing was pulled in because initially, it was like, we all want to do it online. We don't want to be handling cash, we don't want to do all that kind of stuff. So how do we message that? So there's a core group, but I think that it got large depending. And when we were reopening, that involves a lot of people because it's I mean, it's almost everything."

A respondent from Site One wrote in response to if there had been communication changes at the institution: "Yes, we have regular meetings to continue updating the COVID response plan, and send ~quarterly emails to remind staff of our protocols." One interviewee from Site Two shared that there was involvement from the Director, CFO, Head of Communications, Head of Collections, Security Staff, and the "de facto H.R. person." As the COVID-19 pandemic affected all departments, involvement of different departments, specifically front-line staff increased.

Discussion

The purpose of this research study was to examine the ways in which museums are retooling their disaster preparedness plans post-COVID. Facilitated interviews and questionnaire responses from staff at two museums and one library disclosed major findings which are discussed by research question.

What do museum and library leaders feel were the affordances and constraints of their disaster plans in addressing COVID-19?

Regarding affordances and constraints, there were three major findings. Firstly, participants from two of the three case study institutions found that clear communication protocols and established

disaster planning committees was an affordance that allowed their institution to communicate effectively in response to COVID-19. That being said, communication problems were also named as a constraint at all three institutions where their communication protocols were either out-of-date or lacked clarity on who to contact and how to contact them. This resonates with findings found in a case study done on hospital emergency response in Massachusetts that suggest that following established ICS common language, common roles, and chain of command contributed to a better understanding between partners and effective incident response (Taschner et al., 2017).

Secondly, the consensus among interviewees and questionnaire responses from all three sites was that their institution's disaster planning documents lacked an applicable section around extended closure which hindered their institution's COVID-19 response. This constraint was largely unavoidable because the challenges that pandemic posed to institutions was unlike anything before it. Despite that, participants mentioned other scenarios such as volcanic ash and snowstorm closures in the Seattle area that might result in an extended shut-down. However, participants did not speak to those sections as being helpful but rather felt that they too needed to be expanded upon. The scenario-based planning model is recommended by NPS was used at all three institutions (National Park Services, 2019).

Unsurprisingly, the model used by museums aligns with research done on scenario-specific planning models used by hospital and school fields that has shown to decrease conflicts and increase efficiencies (McGlown & Robinson, 2011). However, the scenario planning steps laid out by NPS's museum handbook, and the case site plans were not extensive enough to include extended closure steps. The handbook gives examples of mitigation strategies and emergency response steps which decreases conflict but only describes immediate steps aligning with the issues that respondents of the study identified. For example, the Volcanic Eruption Emergent Response Steps includes and ends with, "Seal exterior doors with tape. Evacuate the building immediately. Meet at the designated assembly point. When evacuating, stay on high ground where possible. Avoid areas where lava or mudslides can accumulate" (National Park Services, 2019).

Thirdly, participants from two of the three case study institutions felt that their institution lacked a business continuity plan to provide direction on how to retain employees which in turn would keep the collection and facility cared for during the pandemic. As these institutions are discussing expanding their planning to include business continuity, their planning strategies will become more in line with

planning models in the hospital and education fields. Business continuity is a large part of response plans within Comprehensive Emergency Management (CEM) planning used in hospitals alongside emergency operations plans for over a decade (McGlown & Robinson, 2011). Using similar models within museums and libraries could allow for a growing understanding and communication around disaster planning best practices across fields.

In what ways are museums and libraries retooling their disaster preparedness plans to better address situations like the COVID pandemic?

Collaboration and increased communication at all case study institutions was a silver lining amongst the circumstances of the COVID-19 pandemic. Museums are being urged by the AAM to revisit their plans to adapt and add to them (AAM, 2020a). Museum and library staff are having to explore and document creative solutions to various concerns including but not limited to vendor shipping changes, evolving CDC recommendations, lost social connections and lost access to museum objects due to safety protocols. This had led these three sites to look within their institution at new voices within various departments and beyond, utilizing their connections to other institutions within the Seattle area or through organizations and networks they were a part of.

Collaboration was also reportedly increased after other major disasters of the past. A study around hospital preparedness post 9/11 reported that, "After 9/11, hospitals began to work collaboratively with other hospitals and public health and community partners which fostered communication and understanding between organizations" (Taschner et al., 2017). This is being echoed in the responses of case study participants of this study during COVID-19. This collaboration helps facilitate identifying regional strengths, gaps, limitations, and community-shared resources. Additionally, participants from all three sites expanded their resources to look towards schools and other fields for best practices to bring back to their institution's disaster preparedness plans. This extends the reach of their resources beyond NPS recommended sources that include federal emergency management or conservation sources (National Park Services, 2019). In conclusion, collaboration and communication are at the forefront of these three case study institutions' approach to retooling their disaster preparedness plans to better address situations like the COVID-19 pandemic.

Limitations

Three limitations had considerable influence on this study: timing of the study, confidential nature of disaster plans, and the study's limited scope on account of the study's lack of geographical variety. Foremost, the study was conducted approximately two years into the COVID-19 pandemic when many museums were still adjusting to the pandemic. Many museums were using resources to keep their doors open, leading to a stall on projects and institutional changes. As a result, the researcher was limited to recruiting institutions who have the resources to react quickly to retool their disaster plans amidst the pandemic. Additionally, two questions near the end of the questionnaire asked about implemented changes which was not applicable to two of the three institutions at the time of this study.

Secondly, the researcher of the study was unable to access the institutions' disaster plans. Access to the plans would have provided an additional layer to the study but were withheld due to the confidential nature of the documents which includes contact information of staff and locations of valuable objects. However, some participants shared contents of the documents, mainly headings of plan sections either verbally during interviews or in written in questionnaire responses.

This study had intended to capture a variety of perspectives from different networks. However, due to a lack of interest in participation of the study, there was a significant challenge in identifying sites where there was not an overlap in disaster planning networks. All three case study sites were partners of Seattle Heritage Emergency Response Network, a collaborative organization and may share similar experiences and thoughts around disaster planning strategies as a result. The scarcity of local disaster planning networks and collaborative nature of these networks means this limitation would have likely improved with a larger sample.

Implications

Disaster planning in the museum field has gained considerable support and momentum in recent years but requires more extensive research of disaster planning as a phenomenon and its effectiveness against emergencies. Further research can help eliminate risks of disaster planning models falling short in their objective to more effectively mitigate disasters that affect staff, volunteers, collections, and the community. The results of this study demonstrate the importance of

disaster planning in the museum field and how they can be applied to mitigate disasters such as the COVID-19 pandemic. While each institution and respondents identified constraints to their disaster planning, the institutions identified affordances and next steps to retool their disaster plans. This research shows the types of disasters that can be mitigated through established and up-to-date disaster plans that implement clear communication, documentation, business continuity planning, and collaboration.

The conclusions of this study may benefit museum professionals interested in retooling disaster preparedness planning within their institution, or to gain a better understanding of the impacts of COVID-19 on the field and institution's resilience in the face of disaster. This study adds to the body of knowledge by exploring museum and library disaster plan models and how effective they were in the unfortunate COVID-19 circumstances. While this study focuses specifically on COVID-19 impacts on institutions in the Seattle area, the outcomes could be applied to museums, libraries, and other heritage organizations that were forced to close their doors during the pandemic. In applying these findings, these types of organizations might incorporate business continuity and extended closure policies, diversify their disaster response resources which may include joining an Alliance for Response network like SHERN, and encourage more participation in disaster planning through institution-wide meetings or an established disaster response team.

While COVID-19 has brought up these disaster planning conversations in a meaningful manner, the pandemic is still ongoing at the time of this study and museums are still in a transitional phase after losing staff and funding. Future research on disaster planning in museums could be conducted once museums have had an opportunity to recover from the ill effects of the pandemic. It is expected that with the appropriate timing, research has the potential to yield more stable and reliable anecdotal and qualitative evidence, especially around museums' documented plans once they are retooled in the coming years. Further research on how institutions that lacked established disaster plans at the time of the pandemic were affected and considerations they have made after the COVID-19 catastrophe would be valuable to this topic. Additionally, further research exploring the impact institution resources such as staff size and budget have on disaster preparedness would supplement this study that looked specifically at mid-sized and large institutions. The case study sites of this study may have more resources and different planning priorities than a small institution with limited resources. When thinking about the

future of this subject, more conversations need to happen about past disasters and how museums have adapted to more defined disaster planning models to share with and benefit the field.

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Appendix A

Semi-Structured Interview Guide

COVID-19 Use of the Plan

1. How well do you think the museum's disaster plan prepared you to deal with COVID-19 within your position?
2. What were the constraints of the prior emergency response plan? In other words, were there any pitfalls or gaps noticed when applying the emergency response plan during COVID-19 that led to adaptations of the disaster plan?
3. Alternatively, were there portions of the prior disaster plan that you did find helpful in navigating the pandemic impacts of COVID-19?
4. Are there other changes that you would like to see to the institution's disaster planning?
5. How do you see these incorporated changes helping prepare the institution in future disasters?
6. What resources, documents, or organizations, if any, do you turn towards for thinking about disaster preparedness?

Final Thoughts

7. Is there anything else you would like to say about disaster planning that we didn't touch on?

Appendix B

Questionnaire

Thank you for participating in my study! Please feel free to collaborate with other members of your institution to answer questions to the best of your ability. All institution and participant names will be made anonymous in the study's findings.

Pre-COVID General Information

1. Did your institution have a disaster plan in place prior to the COVID-19 pandemic?
2. How long has your institution had a disaster plan in place?
3. Prior to the COVID-19 pandemic, which staff members were familiar with the institution's disaster plan?
4. How frequently were staff referring to the disaster plan (either in training or activation of the plan)?
5. Is the disaster plan publicly published?
 - a. If yes, was this conscious decision?
6. Has the disaster plan been iterated before?
 - a. If yes, can you describe when and why it was iterated?

Re-tooling the Plan After COVID-19

7. Has your institution retooled their disaster plan post-COVID-19?
 - a. If yes, what changes were made? If your institution has not re-tooled their disaster plan but intends to, please describe what changes the institution plans on making regarding disaster or emergency response.
8. What made the institution realize the disaster plan needed changes?
9. What was the timeframe between initial discussion to iterating the disaster plan post-COVID-19? If your institution is in the planning stages of re-tooling the disaster plans, how long has your institution been discussing changes?
10. Were there any barriers that delayed the institution's response to COVID-19 disaster planning? Please describe them.
11. Have there been changes to the way the institution is disaster planning since the pandemic?
 - a. Has there been document changes? What were they?
 - b. Has there been communication changes? What do these changes look like?
 - c. Has there been training changes? What do these changes look like?

- d. Are there any other changes that the institution has made regarding disaster planning?
12. Who is making the changes to the disaster plan?
 - a. Is it a collaborative effort? If so, who is involved in discussions around disaster plan changes?
 13. Were there any resources, documents, or organizations that staff of the institution looks towards for thinking about disaster preparedness?
 14. How has the re-tooled disaster plan helped the institution so far in navigating the changing COVID-19 circumstances?
 15. Have there been any challenges so far with the new disaster plan or new strategies that were implemented at this point of the COVID-19 pandemic?
 16. Are there immediate plans to make further changes to the institution's disaster plan?