We are IntechOpen, the world’s leading publisher of Open Access books
Built by scientists, for scientists

6,500
Open access books available

177,000
International authors and editors

195M
Downloads

154
Countries delivered to

TOP 1%
Our authors are among the most cited scientists

12.2%
Contributors from top 500 universities

WEB OF SCIENCE™
Selection of our books indexed in the Book Citation Index in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com
Chapter

The Challenges of Public Service Organizations in Emergency, Crisis, and Disaster Management

James P. Welch

Abstract

The Crisis and Disaster Management process (CDMP) is composed of several clearly defined phases. Strategic risk assessment; preparation and planning, effective response and recovery, and post-crisis evaluation. It is essential for those facing such threats to understand, appreciate, and implement the appropriate responses for each phase. Public service organizations, or PSOs, are increasingly charged with additional duties and responsibilities that historically were not part of their original purview. PSOs are currently forced to operate within an environment of increasing political unrest and social chaos. Events of international magnitude now impact the domestic environment. These organizations must deal with negative media, hostile public backlash, increased scrutiny, and calls for greater accountability. Service organizations are currently faced with increasing political and social chaos, with widespread civil unrest, domestic and international threats of terrorism, human trafficking and illegal migration, public health emergencies, natural disasters, and diverse climate-related challenges. These conditions have fostered additional layers of responsibility to already overburdened first responders and their civil support partners. The consequences are significant. These previously mentioned burdens are further compounded by budgetary constraints, greater regulatory compliance, and organizational accountability. In other words, agencies and departments are expected to do more with less, much more with much less.

Keywords: risk, crisis, disaster, interoperability, communications, recovery, public service organizations

1. Introduction

This chapter will apply to all public service organizations who find themselves in the midst of a crisis or disaster event. The lessons contained in this chapter are, therefore, equally applicable to other public service organizations (PSOs) such as medical, fire, social services, public utilities (electric, water, sewage, and gas), civil defense, and roadway assistance (towing and the like), which are often neglected or even entirely overlooked. This chapter will include a strong focus on law enforcement roles and responsibilities, as they are often the first organization to be tasked with immediate response[1]. Unlike other PSOs, their activity spans the entirety of and crisis and disaster event.
According to Quarantelli [2], such a holistic approach focuses on and encompasses concepts such as careful planning and preparation, complemented by the efficient allocation of limited resources, solid leadership, enhanced problem solving and decision making (PSDM), robust interagency collaboration, effective and timely communications, and development of a well-organized operational response, followed up by a thorough post-crisis evaluation and learning to improve from any errors committed along the way. All of these factors will contribute to fostering a positive image of the responding agency involved, maintaining their all-important reputation, and ensuring public trust and cooperation. In the case study of Hurricane Katrina, reputational damage as a direct result of incompetence was on full display. Individuals in positions of local and national power were fired or otherwise held accountable. President George W. Bush Jr. lost any hope of reelection following the muddled response.

One might be excused for considering the role of these stakeholders to be a well-defined and straightforward proposition during crisis and disaster events, but nothing could be further from the truth. Research has also indicated that the public lacks resilience and is often unprepared in the face of such events, due to the misperception that PSOs will take care of the situation without the need for additional assistance. The truth is that citizens, and the private sector, both have a moral responsibility and an ethical obligation to assist public service organizations in times of need. It has become increasingly apparent that crisis and disaster management is a community concern and that, in order to establish proper resilience, the public and private sectors must also play an active supporting role. Initiatives are such as private-public partnerships.

2. The crisis and disaster management process (CDMP)

As might well be imagined, there exist several phases when passing from risk status to a full-blown disaster. Risk, whether known, perceived, or unknown, is the first stage of this process. It is important to bear in mind that risk can be both perceived and experienced as either positive or negative. This is followed by threats these are dangers that are posed but as yet remain unmanifested, whereas a hazard is a source or situation that presents harmful consequences to persons, property, the environment, or any combination thereof. These two terms are often conflated and understandably so! This is the reason only one term was employed here. Generally speaking, hazard is a term employed when speaking of a condition, which may lead to an accident event, or alternatively non-manmade events, whereas threats are often confined to human behavior, such as a bomb threat, or the threat of violence.

Thus, a threat arises out of risks and once a threat actually manifests itself, it can result in a number of different conditions ranging in seriousness. The gravity of such incidents helps to clarify and categorize them. Such incidents may range in severity from a minor incident to an accident and from an emergency situation up to and including a crisis or disaster event. A disaster that grows beyond the control of the responding organization may eventually rise to the level of a catastrophe or calamity. In such situations, the future remains unclear, with no conceivable solution, and there is a corresponding total loss of control by responding agents (Figure 1).

2.1 Defining emergencies, critical events, crises, and disasters

Let us begin by clearly defining the difference between a crisis and a disaster. Steven Fink ([3], p. 7) defines a crisis, as “...a fluid and dynamic state of affairs...”
containing equal parts danger and opportunity.” The author then goes on to clarify that, “It is a turning point for better or worse.” He relates this to the Chinese term for crisis 危機 (pronounced wei-ji in English). Victor H. Mair tends to disagree pedantically stating “Like most Mandarin words, that for ‘crisis’ (wēijī) consists of two syllables that are written with two separate characters, wēi (危) and jī (機).” Whatever the case may be regarding semantic accuracy, the interpretation as presented by Fink has taken root in the world of CDMP. Bear in mind however that many dispute this interpretation.

Importantly, while this chiaroscuro perspective, when considered in the context of risk, posits that there exist both opportunities and threats. This relates directly to what we refer to as risk appetite. In other words, how much risk are we willing to accept or tolerate in exchange for a perceived benefit? We can also apply this perception to our understanding of a crisis since a crisis is inevitably the result of a risk.

Interestingly, Otto Lerbinger (Chapter 3; p. 45), for his part, sees risk as closely related to the media coverage an emergency event generates and remarks that there exist extremes in perception of what actually constitutes a crisis. The researchers Boin et al. [4]: 163) draw a connection between crises and disasters by elucidating that a “crisis... pertains to the process of perceived disruption; “whereas “disaster applies to the collectively arrived-at appraisal of such a process in negative terms. In this perspective, a disaster is a crisis with a bad ending.” In other words, there is no clear-cut definition that delineates these two phenomena, and they remain largely subjective in nature.

It is useful to also understand the semantic and conceptual difference between what constitutes a critical event and that of a crisis. A critical incident may be considered as an ambiguous and often threatening situation where a routine, emergency situation has the capacity to evolve into a crisis. A crisis surpasses the capabilities, available resources or training of the responding agency and results in an ambiguous or uncertain outcome.

There has been some pedantic controversy related to defining “jī (機)” as opportunity. For further clarification on this topic the reader is referred to: http://www.pinyin.info/chinese/crisis.html.
Crisis Management - Principles, Roles and Application

While crises take on a variety of forms and are composed of distinct characteristics, here we are primarily concerned with intrinsic and extrinsic organizational crises. A good example of a critical incident would be large scale rioting of the type, which took place during the Los Angeles riots of 1992.\footnote{The LA riots, sometimes referred to as the Rodney King riots, followed what was perceived as police brutality against Rodney King. During a traffic stop, King, a Black American was brutally assaulted. The subsequent repercussions were widespread and long-lasting and fostered deep-seated mistrust and contempt between the police and the Black community in the U.S.} A crisis is an event that exceeds our capacity, ability, or resources (CAR) to respond effectively. More generally, a crisis, in turn, is less severe in nature than a full-blown disaster. A disaster presumes the large-scale damage of infrastructure and loss of life, often associated with natural events such as earthquakes, hurricanes, flooding, and fires \[5\]. Unfortunately, some individuals conflate these different concepts. The list below details the core features and challenges that arise during a crisis and disaster event. It should come as no surprise that there is a significant degree of overlap between these elements and those of effective response presented elsewhere in this chapter.

2.2 The core features defining a crisis or disaster

1. A threat which manifests itself unexpectedly without notice
2. There is an urgent need for immediate decision-making
3. Available time for both decision-making and response is limited
4. Numerous requests for information flowing in both directions
5. Lack of organization, a sense of impending chaos
6. Stress factors continue to increase as event progresses
7. Standard operating procedures (SOPs) may no longer apply
8. Increased risk of reputational damage
9. Communications systems are challenged and difficult to manage (technical failures, overload, miscommunication...)
10. The “blame-game” starts
11. Difficulties relating to the maintenance of standard services

2.3 The crisis and disaster management process: Planning, preparation, response, and recovery

Crisis and disaster management is a cyclic process. The various stages include risk assessment, planning, preparation, mitigation and contingency, the response phase, a transition to recovery, and a final evaluation. The final evaluation phases, those of recovery and evaluation, are important, an importance that is sadly often underestimated or overlooked. Careful evaluation and incorporation of lessons...
learned can enhance future resilience. Frequently and unfortunately neglected, in the sweeping wake of relief, which follows a major crisis or emergency event, are these vital final phases of the crisis and disaster management cycle. A prime example of this was witnessed during the military intervention in Iraq, where there was a clear failure to restore the rule of law. Soon following the invasion there was a lack of both coordinated international response and a concurrent failure to respect commitments. Sectarian conflict flared to alarming proportions. The result was anarchy, chaos, and bitter internecine Sunni-Shia factional violence on an unprecedented scale. Problems such as poor governance and widescale corruption still persist to this very day.

In Figure 2, one can visualize all the important phases of the crisis and disaster management response cycle. It is crucial to underscore the fact that within these cycles there are often other “mini cycles that need to be conducted as well.” Thus, each phase of the cycle is simultaneously independent and interdependent.

2.4 Defining and characterizing risk: the first stage of CDMP

Formerly treated as an entirely separate field, risk and strategic risk management are now widely considered, by theoretical and applied research, as the first phase of the crisis and disaster management process. Pursiainen ([6], p. 9), for instance, recognizes the importance of risk management as a precondition for the successful response and resolution of a crisis or disaster event, in accordance with the crisis management cycle.

In order to measure a phenomenon, we must first be able to accurately define it. Risk may be considered to appear in two forms, the first category is risk which is known, has historical antecedents, and can be accurately measured. The second category of risk concerns a more ambiguous form that can be labeled as “uncertainty.”

Uncertainty represents unforeseen or unimaginable events, referred to as “Black Swan events” (Taleb, 2008). Black Swan events are those events which by their unpredictable nature cannot be accurately forecast. A classic example was the multifaceted terrorist attacks of September 9, 2011. Another characteristic that often defines this type of event is that it appears more predictable that they appear more predictable
than they were due to the application of hindsight. Another clearly illustrative example was the Fukushima Daiichi reactor meltdown in 2011.

Risk assessment then is (or at least should be) the first phase of the crisis and disaster management cycle. The definition of risk, nevertheless, remains elusive. Increasingly organizations consider risk as a state, which provide both opportunities and hazards (threats) in equal measure. In this regard, organizations are considered as either risk averse (risk avoidant), or having a risk appetite (risk seeking), or a combination of these, depending upon their stance and outlook. Pursiainen ([6], pp. 23-26) further underscores the difference between the historically based and measurable concept of risk from that of unmeasurable uncertainty, or unforeseen and unimagined risk.

The initial phase, that of risk assessment, is undertaken prior to planning and preparation. Before we can begin to develop plans and prepare to deal with various threats, we need first to identify, analyze, and evaluate those specific hazards. A risk matrix or risk register, such as the simplified one presented below in Table 1, is used to perform this operation.

Please be aware that risk matrices exist in a wide variety of models ranging from overly complex computational models based upon qualitative and quantitative evaluations, or a combination of these. The one presented here is easy to visualize, understand, configure, and apply. When calculating risk we are seeking, once again balance the probability of a critical event with the eventual consequences it may produce. There are also several ways to gauge these characteristics independently. Thus, probability may be gauged on a scale ranging from highly unlikely, to unlikely, possible, probable, and certain, with increasing degrees of certitude. Likewise, consequences may range from negligible, to moderate, critical, and catastrophic, once again in increasing degrees of importance.

The above matrix was developed by the author and employs a simple numerical scale of evaluation, which ranges from the least probable event, with a numerical factor of 1 multiplied by the lowest degree of consequence also with a numerical value of 1. Thus, multiplying the two values we obtain the lowest score (1). For the other values, we use the same method of multiplying the probability times the consequence. Thus, on the high end, one finds the highest probability (certain) with a value of 5. This is multiplied

<table>
<thead>
<tr>
<th>PROBABILITY</th>
<th>IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certain</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Negligible 1 M 5 M 10 H 15 H 20 H 25</td>
</tr>
<tr>
<td>Probable</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Minor 2 M 4 M 8 M 12 H 16 H 20</td>
</tr>
<tr>
<td>Possible</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Moderate 3 M 6 M 9 M 12 H 15</td>
</tr>
<tr>
<td>Improbable</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Critical 4 L 2 L 4 M 6 M 8 M 10</td>
</tr>
<tr>
<td>Highly Unlikely</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Catastrophic 5 L 1 L 2 M 3 M 4 M 5</td>
</tr>
</tbody>
</table>

Matrix Scale 1-4 = Low; 5-12 = Medium; over 12 = High

Table 1. A simplified risk matrix.
by the greatest consequence (catastrophic) also with a value of 5, producing a maximal risk rating of 25. In this way, the two criteria may be easily evaluated according to their significance. The colors were designed employing a standardized, green-amber-red, traffic signal pattern as per many similar examples in the literature. Green represents minimal threat, yellow a moderate threat, and red a threat of a significant hazard.

Once this process is complete and we are aware of the possible threats we face, we can then move on with the next two stages, which consist of planning and preparation. If the importance of the planning and preparation phases are not sufficiently emphasized and supported, not only will the personnel fail to develop a crisis management culture, but also the other subsequent stages of the cycle will be left wanting as well.

There are two clearly defining formulas, which help us define risk. The first is $R = p \times c$, or probability x consequences will provide us with a relative estimation of risk incurred. The second formula defines and speaks to the confluence of three factors, whereby vulnerabilities + Assets + Threats = Risk or $V + A + T = R$. All three elements must be reunited for risk to manifest itself.

Assets are what is at risk, and represent what we are trying to protect and what is important to us (for instance, family friends, material possessions, wealth, and infrastructure). One category often overlooked when defining assets is that of intangible assets, such as knowledge. Knowledge and knowledge management (KM) are key resources and contribute to the long-term viability of any public service organization. Vulnerabilities represent weaknesses or gaps in our security or resilience, and finally, threats exploit our vulnerabilities in order to damage or destroy our assets. You must have all three for a threat to exist: no assets = no risk, just as no vulnerabilities or threats also = no (or limited) risk.

One critical point to bear in mind here is that there is no such thing as 0% risk. No matter how marginal it may be, there is always some degree of risk present. Every activity we undertake in life carries a risk, and the difference is that we assume those risks following a cost/benefit, or rational choice analysis and assigning them with relative priorities. The cost/benefits analysis is, however, not always entirely rational, as we shall see.

According to ISO 31000 [7], an organization can establish risk assessment through constant communication and consultation, after identifying the context of the risk through three core phases. These include risk identification, risk analysis, and risk evaluation. Subsequent to this is the development of the risk treatment plan (the method by which we intend to reduce the risk). We constantly monitor and evaluate the risk treatment plan for any eventual revision [7].

The three principal stages involved in the organizational risk treatment plan include the principles, the framework, and the actual processes themselves. In public service organizations, these elements need to be clearly defined and aligned according to the mission, values, and long-term goals of the organization. Risk management can never be a simple add-on or afterthought. If it is to be effective, it must be adopted by the entire organization with proactive support from the executive. It is also important to clarify that when evaluating risk there exist both intrinsic and extrinsic objectives, the risk to the organization itself, and the risks involved in its crisis and disaster response framework.

2.5 Planning, preparation, mitigation, and contingency

While no two crises or disasters are ever the same, it is worth bearing in mind that there do exist common denominators between various events. It is, therefore, possible to plan, prepare, train, exercise, and practice that level. The total lack of training and practice will offer a response that is equally inadequate such as that we witnessed.
during hurricane Katrina. Additionally, preplanning and preparation for the strategic allocation of resources and the prepositioning of emergency facilities can offer a tremendous advantage to the organization when a crisis or disaster does occur.

The planning phase can be conducted using what is commonly referred to as the SWIFT technique, or the Strategic “what if” technique. This is a “Delphi, method, whereby a group, composed of both pertinent stakeholders and subject matter experts (SME’s), sits together, and poses questions concerning risks faced by the organization. The use of keywords, such as “people” and “infrastructure” will help to define the core parameters of concern. The organization pares down the list to a manageable number of hazards by selecting only the most relevant and realistic threats facing the organization. Once the threats have been adequately identified, defined, and evaluated, a plan regarding pre-event mitigation and post-event contingency countermeasures to be taken can then be developed and implemented. It is also during the planning to preparation phase that appropriate training and exercise cycles are also developed.

2.6 Response phase

Once the threat manifests itself, or the critical incident exceeds the capacity, abilities, or resources of the organization, there is the need for interoperability (see JESIP chapter on decision making and a unified response to the given situation) \[8\]. We develop the guidelines of this process in the planning and preparation phase of the crisis and disaster management cycle. This includes private-public partnerships (PPP’s), as well as collaborating with alternative stakeholders such as non-governmental agencies (NGO’s), charitable organizations, volunteer groups, and the public. Effective response to a critical incident, crisis, or disaster event is primordial for safeguarding organizational reputation.

2.6.1 Interoperability and the C7 doctrine

Interoperability has been framed within the context of inter-agency communications. It is the opinion of this research, however, that such a limited application is both counterproductive and counterintuitive. Indeed, the concept of interoperability, as envisioned in this chapter relates to what has been referred to as the C7 Doctrine.

The C7 doctrine is a combination of four core elements (C4): two leadership variables (C2) and community involvement. C4 includes communication, cooperation, coordination, and collaboration. In passing, it is useful to bear in mind that cooperation and collaboration are the distinct approaches. Cooperation indicates two or more agencies working together, while collaboration, a much deeper concept, relates to two or more agencies working together with a common goal or objective. The reference to C2 concerns command and control, essential for the proper preparation, response, and recovery from crisis and disaster events. Without proper lines of command and control, all phases of operations will be negatively impacted. Finally, and by no means, less important is the element of community.

Another integral part of achieving optimal interoperability lies in the development of a common training framework or CTF. Agencies that work together on a regular basis and those that may eventually be called upon to assist in a large-scale event need to have the proper cooperation and collaboration that only combined training protocols can provide.

One enormous advantage to such an approach lies in the possibility to draw from a wide well of experiential and organizational knowledge. A joint response, when properly coordinated, is a more effective response by any measure. Immediately we tend to think of police, fire, and medical; however, there are a host of other agencies that need to grasp and understand the joint operational framework. The axiom: fail to plan=plan to fail comes to mind. Thus, stakeholders, both public and private, can contribute to the enhanced preparedness and resilience of the community.

Private organizations and local businesses can be incorporated into private-public partnerships, or PPPs, and other stakeholders such as military units, border control, maritime and aviation services, as well as various corporate entities, businesses, NGOs, and community and religious leaders should all be incorporated and encouraged to participate in plans for effective preparation, response, and recovery aspects of a potential disaster. At least fifty-seven deaths occurred during the freak Texas snowstorm of 2021 [9]. Better preparedness and visionary training through the adoption of a multi-stakeholder approach could have help reduce the impact significantly. One needless death is always one too many.

2.6.2 Elements of effective crisis response

1. Maintaining reputational integrity
2. Sound planning and preparedness
3. Solid leadership
4. Effective and timely communications
5. Strategic, well-organized interagency collaboration
6. Strategic resource allocation
7. Successful operational tactics, and
8. Post-crisis evaluation and learning to improve from any errors committed along the way

2.6.3 Cascading events

Crisis and disaster events do not always occur in isolation. It often happens that multiple events take place simultaneously, or a single event serves as a force multiplier. They may precipitate and trigger a complex series of interrelated and unforeseen events rapidly playing off one another in random succession, resulting in far greater damage and negative consequences. Such compound events of course create a greater economic and social impact. Cascading events also call for increased resources, logistics, and personnel as part of an effective response. Noticeably clear examples of cascading events, sometimes referred to as the domino effect, can be witnessed during many crises or disasters. The negative impacts may be immediate, or they can be described as long shadow events. That is, events with a rapid start and quick conclusion, but which, nevertheless, result in long term effects, such as in the case of the Fukushima Daiichi nuclear reactor incident in 2011.
Recent research indicates that the Fukushima Daiichi Nuclear Power Plant released particles containing radioactive cesium, Cs137—one of the more common fission products by the nuclear fission of uranium-235, during the 2011 nuclear disaster in addition to trace amounts of plutonium 241 as well other radioactive isotopes [10, 11]. The half-life of these materials are 30 and 50 years, respectively. As Fukushima occurred only 11 years ago, we are still in hot water, so to speak. When considering the gravity of this event one can compare it with Chernobyl as both events were rated as level 7 disasters rated level 7 on the International Nuclear and Radiological Event Scale by IAEA.

Recently, on July 21, 2022, the Japanese government admitted their failed decontamination policies with regard to effectively dealing with the disaster. This resulted in the environmentally catastrophic decision to release the contaminated Fukushima Daiichi waters into the Pacific Ocean. According to the best research estimates and projections, the contaminated waters are slated to enter the East China Sea, and nearby South Korean waters as early as 7 months following the release. Levels of all radioactive materials were well above international levels, even when accounting for previous nuclear weapons testing.

Other long shadow events with enduring consequences can be witnessed in the case of the attacks on the World Trade Center in 2001, or the more recent COVID-19 pandemic that resulted in long-lasting political, economic, social, technological, legal, and environmental (PESTLE) upheaval. Any crisis or disaster event is, therefore, capable of producing short term, long-term negative consequences, or any combination of these in tandem.

2.7 Recovery and evaluation phase

Often overlooked and given short shrift, the recovery phase is just as important, if not more important in some respects, than the actual intervention and response. This is the result of a normal human reaction. The high-stress levels calling for immediate action and decision making incurred as a feature of the response phase dissipate. Relief of having survived the worst subsumes thoughts of recovery once the danger has passed is but a memory.

There should always be a formal handover of authority between those responsible for the response phase and those dealing with recovery from the aftermath of an incident. The reason for this formal handover of authority and responsibility is quite obvious. Those concerned with the recovery process require a different skill set than those responding to the same event. This includes different formation and training. On a purely practical level, those who responded to a major event would find themselves taxed and overburdened should they be required to continue without respite. There is an additional symbolic aspect to this handover, and that is the aspect of passing from the phase of active response to one of active recovery. It is precisely this aspect that often leads to organizations neglecting the importance of the recovery phase as relief settles in and the crisis becomes an undesirable past event.

It is absolutely essential to incorporate the public as an integral component of the recovery process. This was evident during the Thai Cave Crisis, where the authorities established a specifically designated area and support services for the relatives of the children. The Thai cave crisis took place in Thailand's Chiang Rai province. Twelve children were

---

4 See for instance: https://www.thenational.ae/world/thai-cave-rescue-everything-we-know-so-far-1.747347
young boys accompanied by their sports coach decided to explore some caves and became trapped in a small, isolated pocket inside with no clear exit. The group risked drowning due to rapidly rising seasonal flooding. Their eventual rescue was a tale of courage, ingenuity, and international cooperation. As with the other two core features of the crisis and disaster management cycle, planning and preparation, and response, recovery too has the same core components of preparation, response, evaluation, and reconfiguration (as necessary).

3. Public service organizations (PSOs)

3.1 Seeking a cohesive approach

Despite the fact that this chapter presents a cohesive approach to the Crisis and Disaster Management Process (CDMP), it is, nevertheless, impossible to provide the level of detail this topic deserves. Here, we are examining a selective approach to CDMP and how it pertains to PSOs.

It was only following a significant rise of social, technological, and natural disasters and their accompanying devastating impacts, during the 1980s, that risk assessment, health and safety culture, and crisis and disaster management eventually made their entry into the public service and not-for-profit sectors. The challenges relating to critical events have become more numerous, more widespread, and increasingly complex. For instance, technology has become a complex system of systems. Processes such as nuclear plant operation have become so complex that they surpass human capability and often require oversight by other systems such as industrial control systems (ICS) or supervisory control and data acquisition (SCADA).

Public service organizations, and policing agencies in particular, are currently facing new challenges and taking on responsibilities that were hitherto not a part of their purview. This has led to a more diversified approach to risk management, often referred to as risk governance. Whereas risk had previously been contained at the organizational level, today the reach and impact of various crises and disasters are far more diverse and include a more global perspective. Issues such as natural disasters, transnational-armed conflict, transnational organized criminal activity, (henceforth TOCA), trafficking (in persons, arms, fauna, stolen art, and artifacts), cybercrime, terrorism, and public health order are now often the concerns of police agencies at the international level, with domestic repercussions.

It is essential that organizations have an appropriate vision and terminology when dealing with risk and the CDMP. When speaking of the recovery process, for example, the term most frequently encountered in the literature is “business continuity.” Public service entities are uniquely different from their public sector counterparts and their enterprise risk management approach (ERM). Terms such as “service continuity,” “service maintenance,” or “service delivery,” “would be far more appropriate to describe this process.” Descriptive terminology is important in fostering a clear understanding. In order for public service organizations (PSOs) to accept and fully take ownership of the crisis and disaster management process, they must have that process and its associated terminology appropriately tailored to their needs.

For a more in-depth understanding there is a complementary suggested reading list provided at the end of the chapter.
3.2 Reputation (R) and Trust (T) as integral assets of PSOs

It is worth underscoring here the significance of the threat posed to organizational reputation. One of the principal, and most important, assets of any public service organization is its reputation. There are countless incidents where severe reputational damage negatively affected public confidence and trust and even resulted in political and social upheaval due to excessive police repression. Pertinent examples include the 1991, LAPD beating of Rodney King incident [12], or the Danziger Bridge murders (a case study presented in this chapter), to name but two. More recently, we may cite overly aggressive police responses during the COVID-19 pandemic. This relationship may be presented as the “Big R = Big T” formula, whereby an organization’s reputation is contingent upon public trust and conversely, public trust is founded upon the reputation of the organization. In the advent of flawed, inadequate, improper, unjust, or overly aggressive responses by a public service organization, there will be a corresponding loss of reputational credibility. This, in turn, leads directly to a decline in public trust in said organization. Thus, the concepts of reputation and trust exercise a reciprocal relationship.

3.3 PSO responsibilities during crisis and disaster events

The police and other PSO’s have significant and challenging duties even under the most normal conditions. During critical incidents and in times of crisis and disaster, unsurprisingly, challenges and responsibilities are compounded. In addition to their normal fare of providing and maintaining safety, security, and public order, responders must cope with issues such as interoperability, crisis communication, the effective allocation of limited resources, mass evacuation, dealing with the disruption of and damage to public utilities, provision of emergency shelter, psychological support, responding to rioting and prohibiting looting, providing emergency medical treatment, and conducting victim identification and much more. All these various roles and responsibilities need to be considered when developing an action plan during the planning and preparation phase.

As far as law enforcement is concerned, there are five core functions relating to policing during a crisis or natural disaster. The first four were cited back by Will. C. Kennedy [13], and these guiding precepts, nevertheless, remain immutable to the present day. A fifth function has been added here:

1. Crowd control and traffic flow
2. Protection of life and property
3. Search and rescue
4. Warning and evacuation
5. Preventing looters

It is unfortunately only in the wake of recent disasters, such as that of Hurricane Katrina, that there has been increased awareness about the roles and responsibilities of the police during events such as natural disasters. While the above five-outlined principles are obvious and make clear sense, some of their characterizations may not be so straightforward.
Subsumed under these guiding principles, we might also consider, more specifically, related functions. These include establishing command centers, commandeering, organizing, and assuring logistic and communication support, treating, and transporting the sick and injured, loss prevention and anti-looting, prisoner relocation, establishing areas of safe passage, or assuring the safety of other responders including the more obvious fire, medical, and rescue personnel but also less obvious personnel such as volunteers and public utilities, among others. Another important concern is striking a balance among crime fighting, service maintenance, and the actual disaster response. In many, if not all, cases, the first two concerns become secondary in light of disaster response and survival priorities.

The consensus is that the first three hours following a disaster are most crucial. We might logically refer to these and the CDMP “golden hours.” The relative evaluation of damage to infrastructure and the loss of life should occur during this immediate response phase and the public appropriately informed. This helps to curtail misinformation and the spread of rumors and contributes to effective communication management. The Hurricane Katrina case study is a classic one which officers and other crisis, and disaster management personnel should acquaint themselves with. It offers pertinent examples of how not to conduct a crisis management event, and it would, therefore, be remiss, to overlook the important lessons learned from that particular disaster. Our specific case study presented at the end of this chapter will deal with just once incident during these events—the Danziger Bridge shootings [14], described later in this chapter.

3.3.1 Policing aspect

When questioned as to the responsibilities of the police during such events, most individuals would respond that the primary function of the police is the assurance of public safety, the provision of public security, and the maintenance of public order. Increasingly, however, the functions fulfilled, the responsibilities held, and the services provided by police and other public service agencies have shifted dramatically. Police leadership and their respective agencies are currently being tasked do more with less. This infers that during a crisis or a disaster event their ability to maintain normal services is disrupted and what service is provided may be inadequate or subpar. While all the previously mentioned imperatives certainly still apply, a host of newer and even greater challenges, such as public incivility and negative social dynamics, has compounded former responsibilities. This is particularly true in light of technological advances such as the Internet, digital communications, and the advent of social media, all of which hold both promise and challenge in equal measure. This chapter will explore various aspects of crisis and disaster management, through an optic of police responsibility during crisis and disaster, leadership and interoperability during crisis and disaster, and crisis communications as they pertain to policing in the twenty-first century.

4. Public service failures

4.1 Hurricane Katrina: a spectacular public service failure

The research will adopt Hurricane Katrina, as a case study template for crisis and disaster management in policing, and explore one particular incident during that event, that of the Danziger bridge shooting, for reflective analysis. The Danziger Bridge incident occurred early in the morning of September 4, 2005. This was six
days following the arrival of Hurricane Katrina. Officers from the New Orleans Police Department (NOPD) scrambled in response to what was allegedly a call from another officer who had been fired upon. Two civilians were shot dead, and four others seriously injured. Later investigation revealed that none of the victims had committed any crime, nor were they armed. To make matters worse the original investigation was flawed by misreporting and the planting of false evidence. The trust in the police eroded and public cooperation vanished as a result of this incident. We shall take a further, in-depth look at this event later in this chapter.

During Hurricane Katrina, a large number of officers failed to respect their obligations to report for duty, fleeing the city with their families instead, as Benjamin Sims [15] attests to the fact that “Hundreds of police officers resigned or simply walked off the job, two committed suicide, and those who remained were severely demoralized and under extreme stress” [15]. Such unforeseen dynamics often alter the response and exceed both expectations and contingency plans. Strong visionary leadership, creative and flexible thinking, and organizational improvisation can usually overcome them [15]. Of course, one of the most key features related to crisis and disaster emergency response for PSO’s is effective interoperability and effective interagency collaboration, something that was severely missing during the Hurricane Katrina disaster. Subsumed under the acronym C7, there are seven principal concerns while dealing with any crisis or disaster event; these are Command and Control (C2) Cooperation, Communication, Collaboration and Coordination (C4), and Community. These are covered in detail in a later section of this chapter.

Katrina represents an excellent case study, since the primary function of case studies is for learning and avoiding the mistakes that others have made, rather than merely assessing successful responses. The importance of case studies, therefore, is not what went right, rather what went wrong and how public service organizations, such as the police, can avoid similar errors in the future, while incorporating lessons learned into their future action plans.

During Hurricane Katrina, the New Orleans Police Department lost this valuable window of opportunity in S&R (search and rescue) operations, bringing close to three hundred of its own officers to safety. According to Cha [16], the total number of officers who showed up for work represented only around two-thirds of the entire force, while Anderson [17], reported that following the events of Hurricane Katrina, “sixty officers resigned, forty-five were fired [plus an additional 6 civilian employees], and two officers committed suicide” [15]. Other sources cite different figures where they state ninety-one officers resigned and 228 investigated for disappearing from their assigned duties, and Baum [18] reported that more than a 150 officers were eventually fired or left the department, of their own accord, after failing to perform during the crisis. Another 40 having been placed under investigation. In the end, according to Scharf and Phillippi [14] a staggering number of officers, more than 200, who walked away from their, in total, were either fired or disciplined. Many of those would did walk away from their responsibilities were younger, less experienced, and felt overwhelmed by events according to Treaster [19]. There were 1,833-recorded deaths, related to the disaster, in total [20].

Regardless of the exact numbers, such figures would represent a heavy toll in human capital for any public service organization. Additionally, as Eunjung Cha [16] noted, “In the days before the hurricane, the police force numbered 1750. After Katrina, officials could account for only a few more than 1200.” No one knows whether the missing are dead, injured, or just could not face the horror of the work. There were critical external drivers involved: poor training, a lack of disaster resilience, failed mitigation, and the absence of any meaningful contingency planning,
all of which contributed to the disastrous response. The failed response was also the culmination of a number of factors ranging from rampant corruption, failed preparations, and inadequate organizational management for ineffective and inefficient provision of shelter and evacuation, widespread negligence, poor leadership, and especially organizational paralysis in the face of disaster [21].

If the storm front and other factors were not bad enough, they were compounded by backed up sewers, a lack of running water, approximately 2,000 dead littering the streets, widespread theft in vacated homes, and looting of shops being conducted by wayward citizens. A limited number of rogue officers were also involved in the looting themselves, raising the pertinent idiomatic question “Quis custodiet ipsos custodes?” [22] (In other words, who will guard the guardians?) The significance of officers joining in the looting led to the perception that the rule of law had collapsed. Such a condition can easily tip a situation into anomie, as it did in this instance. During a crisis or disaster event, perception frequently becomes more powerful a predictor of behavior than fact. In addition to these various elements, there was a failure at both the state and federal levels to understand the complexity, depth, and importance of the disaster and to organize effective assistance in its wake.

4.2 Danziger bridge case study: does reputation matter?

Date of event: September 4, 2005. Description of event: Six NOPD officers, none of them in uniform, responded to a report of officers under fire. They commandeered a Budget rental truck. They left the vehicle firing their weapons. There was no evidence, according to federal prosecutors of police having been under fire at the time. They were in fact firing upon unarmed civilians seeking food and medicine in the wake of Hurricane Katrina.

Death and injury: The officers killed two civilians and injured four others. The officers shot Ronald Madison, a forty-year-old mentally disabled man, in the back and repeatedly kicked as he lay dying. James Brisette, the other fatality was only 17-year-old [14].

Attempted cover-up: In an attempt to exculpate, the seven officers indicted on July 6, 2005, Homicide detective Arthur “Archie” Kaufman, appointed as lead investigator, attempted to conceal evidence and falsified reports, while NOPD Lieutenant Michael Lohman planted a personal unregistered weapon (called a “ham sandwich”) near the scene in order to justify the shootings.

Prosecution results: Seven officers under indictment. State charges vacated in August 2008. Federal prosecutors indicted four of the officers on murder charges on July 12, 2010. Five officers found guilty on August 5, 2011. Hefty sentences ranging between six and sixty-five years were handed down. On September 17, 2013, a retrial ordered based upon prosecutorial misconduct. On April 20, 2016, the five defendants plead guilty to reduced charges and receive reduced sentences, and on December 19, 2016, four civil lawsuits also resulted in a settlement for the families and victims of this event.

Consequences: Severely damaged reputation and negative impact on public confidence in the police. Compounded and magnified other concurrent police misadventures such as unauthorized commandeering of luxury Cadillacs, looting by a limited number of officers, and 228 officers failing to report.

4.3 Ethics and responsibility: a crisis wrapped inside a disaster

As we have seen, there was an inadequate and failed response on the part of local, state, and federal government in the wake of Hurricane Katrina. The natural disaster,
compounded by failed response on the human side, sullied the reputation of anyone involved and particularly that of the New Orleans Police Department (NOPD). Hurricane Katrina compounded NOPDs already previously weak and tarnished reputation. It took a devastating direct hit with the Danziger Bridge shootings.

4.4 Lessons

4.4.1 Crisis communications

As might be expected from the preceding remarks on Hurricane Katrina, there was also a total collapse and failure of the crisis communications network and associated systems. Communications are a core requirement for PSOs to function effectively. From delivery of services to cross-hierarchy communications, the ability to transmit pertinent and timely information cannot be underestimated. Additionally, in a large-scale disaster event such as that of Hurricane Katrina, it became painfully obvious that failed communications not only hampered rescue operations but also severely restricted and reduced all interagency efforts as well.

During Hurricane Katrina, the entire electrical system and telephone exchange—both wired and wireless, became inoperable. This of course resulted in a lack of computer access to the Internet, with the consequent lack of ability to issue public warnings and information, such as evacuation plans. When the Hurricane made landfall, high winds knocked over emergency response radio towers, rendering the 800 MHz emergency radio system for the entire state of Louisiana inoperable for a period of several days, while flooding washed out most of the backup generators [15].

Additionally, the fact that one of two police officers who committed suicide was the public information officer, or the PIO, certainly did not bode well for the crisis communication plan and cast a dark shadow over those feeble efforts. These events were the direct result of poor foresight, inadequate planning, and a total absence of any effective mitigation strategies. All commanders had been distributed detailed hurricane response plan in 2004, but this remained untouched and lay unused gathering dust on bookshelves. In addition to these numerous problems, both Mayor C. Ray Nagin and Superintendent of police Edwin P. Compass added to the reigning panic and confusion while appearing on Oprah on September 6, 2005, with poorly informed, inaccurate, and misplaced announcements that:

“We had little babies in there, some of the little babies getting raped.” Mayor C. Ray Nagin concurred: “They have people standing out there, have been in that frickin’ Superdome for five days watching dead bodies, watching hooligans killing people, raping people.” [15, 23].

The ill-fated Convention Center and the Superdome housed approximately 20,000 people per structure, and many huddled in deplorable conditions lacking fresh water, toilets, or air-conditioning in the stifling heat. Given the fact that there was only a single homicide recorded at the Convention Center, one can only surmise that their ill-conceived strategy was to create a shock effect designed to receive immediate and substantial federal support. The unfettered media also contributed to the widespread veil of fear and panic by speculating and promoting such unsubstantiated rumors as well. Such cases bear witness to the difference between responsible reporting and freedom of the press.

In Policing Major Events Hanser et al. [11] discuss the role of the Federal emergency center (FEMA) in Baton Rouge, and they monitored the path of the hurricane but
over 100,000 people were still in New Orleans with no means of transport. The police in New Orleans faced difficulties, with 150 police officers abandoning their positions. There was duplication of response efforts between New Orleans Police (NOPD) and FEMA. This clearly indicates a lack of effective communication and coordinated response. Communications were difficult, and the communication systems had been damaged. The violence that ensued after the hurricane was subsequently accompanied by widespread looting.

The comprehensive U.S. House of Representatives report, “A Failure of Initiative” [24] highlighted the fact that “As Hurricane Katrina approached New Orleans, and the devastation started, it was immediately evident that the concept of unity of command and mutual cooperation had become fragmented.” Much of this chaos was a result of the unforeseen scale of damage incurred in the early hours of the hurricane. The report continued “Local governments’ command and control was often paralyzed by the complete destruction of their entire emergency management infrastructure” (p. 184). This completely contradicts the logic advanced by Wachtendorf [25], who asserts that organizations create sense making in the face of uncertainty by drawing on plans. The disaster plans for New Orleans were in place, but they gathered dust on a shelf. The same report observed that despite the fact that the Department of Homeland Security (DHS), The Federal Emergency Management Agency (FEMA), and other government bodies had conducted extensive planning and training for events such as this, there was, nevertheless, a catastrophic breakdown in the emergency response in New Orleans.

The conclusions of the report by the U.S. House of Representatives [24] were abundantly clear, emphasizing that “This lack of coordinated response led to ineffective rescue, recovery, relief operations, and communications (media) strategies.” Local, state, and federal organizations failed to properly coordinate and control in any meaningful way. Operations such as search and rescue, providing food and drinking water, evacuations, and other essential elements of any major rescue and recovery response, were entirely inadequate. One of the unintended consequences of the evacuation of some 250,000 people to Houston in Texas was the number of people on parole from prison (estimated at between 1,300 and 1,700 people) and the gang members who took advantage of the situation to escape to Texas. This shortsightedness has had negative post-disaster security repercussions.

4.4.2 The media

Traditional media, sometimes referred to as “analog,” covers things such as printed material, newspapers, and other forms of non-digital communications. Traditional media is still an important source of information and communication for several reasons:

• Traditional media is favored by marginalized groups who may not benefit from other forms of communication

• Traditional media can be effective and complementary when digital sources, such as during Hurricane Katrina, are knocked out

• Failing to incorporate traditional news sources into crisis reporting can backfire on organizations and open the door to criticism and reputational damage. Public service organizations may lose the narrative and become victim to disinformation, misinformation, and distortion.
4.4.3 Leadership during crisis and disaster

Powerful events call for powerful leadership and decision making. During a critical incident or crisis event, there are two fundamental requirements: an organization to respond and a leader to direct their efforts. While there exist countless theories defining leadership, there is no one clear and decisive framework that applies to all leaders in all situations at all times. Leadership is one skill that escapes analysis and definition. A leader who proves exemplary under normal circumstances may crack under the strain and pressure of a major crisis or disaster and fail to rise to the challenge. One fact remains certain is that critical incidents, crises, and disasters evaluate the mettle of even the strongest leaders. This is where the concept of teamwork and the allocation of responsibility also come into play. An effective leader never attempts to deal with a crisis event single handed, he or she knows they must be able rely upon well trained and trusted subordinates.

What then are the specific characteristics that a leader needs to exhibit when faced with a crisis or disaster event? Accountability, integrity, and trustworthiness are indispensable. Failure to exhibit these traits and set an example for subordinates will have a negative impact on the entire organization. Leaders need to be visionary and flexible, and able to change and adapt plans according to the ever-changing and challenging circumstances they face. They must be able to rise to the occasion and make decisions rather than prevaricate and hesitate during the decision-making process. Finally, the leader needs to accept and assume responsibility for their decisions.

Most police leaders have enough knowledge and experience that should they make a “wrong” decision such a decision will have negligible effects. At the end of the day, a wrong decision is preferable to no decision whatsoever. Leaders must be able to offer strong affirmative direction and still be open to suggestions and feedback from subordinates. Finally, during a crisis and disaster event, leaders will both delegate authority and responsibility, as well as sharing authority and responsibility with interagency partners.

5. Conclusion and recommendations

The entire spectrum of the CDMP has been addressed in this chapter. This will serve as an introduction to those who are unfamiliar with the process and as a refresher for those who have mastered the associated skills involved. Responding to critical incidents such as crises and disasters requires not only dedication and motivation, but also continuous monitoring and pre-crisis training.

A crisis or disaster event can, and often does, occur without warning; however, in those instances when there is advanced warning public service organizations must be well-trained and ready to respond at a moment’s notice. Today’s public service organizations are overwhelmed, underfunded, and understaffed. They are forced to do more with less. In order to maintain an adequate level of service, it is essential that they learn past lessons from different case studies to avoid falling into the same traps and committing the same errors. It is essential to maintain a high sense of purpose and professionalism despite the increasing pressure and obstacles to organizational performance.

Emergency, crisis, and disaster management are but one of the numerous challenges for which officers and departments must be prepared. All too often crisis and disaster management begins with the best of intentions, but momentum and commitment are quickly lost in the struggle to balance other, more immediate issues. It is incumbent upon the leadership to create and maintain a culture of risk and crisis preparedness lest they fall into the turmoil similar to that witnessed during Hurricane Katrina.
This imperative entails a number of important recommendations and steps to be introduced. Prominently figured among these required adaptations are adequate training based on common training framework (CTF) and education, proper logistical support for the effective and timely allocation of limited resources, robust interagency collaboration, and a visionary leadership executive that leads by example. Dedicating a portion training and awareness on CDMP to PSOs on a regular basis is primordial for successful response and resolution of crisis and disaster events. Merely having a plan in place is not enough. Even the best plan in the world is useless if, like in the case of Hurricane Katrina, it remains on a shelf-gathering dust.

Being aware and taking advantage of new technological developments, such as artificial intelligence (AI), unmanned aerial vehicles (UAVs), early warning systems (EWSs), and computer modeling in conjunction with new life-saving advances, will contribute to the effectiveness of responding organizations. It is highly recommended that governments adopt a more proactive approach to fostering such research and development (R&D) in the field of CDMP. This will lower the burden of strained PSOs while increasing their ability to respond more effectively.

Citizens and the private sector must be made aware and informed of their roles and the importance of their efforts in conjunction with public service organizations. It was never a feasible assumption that PSOs would take full responsibility during times of crisis and disaster, and in the current challenging environment, it is even less the case.

Hopefully, the information and insights provided in this chapter will contribute to a better understanding and awareness of the importance of crisis and disaster preparedness as it pertains to public service organizational management during critical periods of crisis and disaster while providing room for expanded development and research in this critical area.
Suggested reading

**General Reading**


**Risk Management**


Bao C et al. *Comparison of different methods to design risk matrices from the perspective of applicability*. Information Technology and Quantitative Management (ITQM 2017). 2017;122:455-462


**Disaster Research**


Quarantelli EL. *Organizational Behavior in Disasters and Implications For Disaster Planning*. Newark, DE: Disaster Research Center; 1985

Wachtendorf T. *Improvising 9/11: Organisational improvisation following the world trade center [doctoral thesis]*. Newark, Delaware: University of Delaware; 2004

**Policing During Crisis and Disaster Events**

Kennedy W. *The Police Department in Natural Disaster Situations*. Delaware: The Disaster Research Center, Department of Sociology, University of Delaware; 1969

**Crisis Communications**


**Interoperability**

The Challenges of Public Service Organizations in Emergency, Crisis, and Disaster Management
DOI: http://dx.doi.org/10.5772/intechopen.108408

Leadership in Times of Crisis and Disaster


Hurricane Katrina Case Study


Fink S. Five Days at Memorial: Life and Death in a Storm-Ravaged Hospital. 1st ed. New York: Crown; 2013


The Danziger Bridge Shootings


Youtube video clip: https://www.youtube.com/watch?v=m7t4dh3XsVg
Author details

James P. Welch
Policing and Security Department, Rabdan Academy, Abu Dhabi, UAE

*Address all correspondence to: doctorjamespwelch@outlook.com

© 2022 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.
References

[1] Kennedy W. The Police Department in Natural Disaster Situations. Delaware: The Disaster Research Center, Department of Sociology, University of Delaware; 1969

[2] Quarantelli EL. Organizational Behavior in Disasters and Implications for Disaster Planning. Newark, DE: Disaster Research Center; 1985


[22] Juvenal from his Satires (Satire VI, lines 347-348), 2022

