

Recurrent Themes in Comprehensive Emergency Management

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Abstract

This paper discusses the Comprehensive Emergency Management concept to assess the common characteristics of each phase of disaster. Traditionally, Comprehensive Emergency Management has been thought of in a circular, albeit linear, motion shown in the introductory texts of emergency management. With the assistance of the emergency management literature, this paper will seek to underscore the recurring patterns of activities in emergency management through the creation of a matrix. The matrix will illustrate common functions or requisites within and across the mitigation, preparedness, response and recovery phases. These consistent themes include: information requirements and media relations, special population, communication, cooperation and coordination, assessment and planning. Implications of this research will be mentioned for academics as well as practitioners

Introduction

Since its introduction by the National Governors Association in 1979, the concept of comprehensive emergency management (CEM) has played an important role in the administration of disaster related activities (Drabek & Hoertmer 1991). Among other things, this notion suggests the need to integrate all hazards, all phases and all actors into an encompassing view that may help to facilitate the reduction of disasters (Godshalk 1991, 145). While attention given to CEM is currently waning due to the exploration of alternative ways of approaching the disaster problem (Mileti 1999; McEntire 2000; Britton 1999), there is still much utility in this concept. Some of the recent theoretical and policy relevant approaches to disaster reduction are only partially built upon the notion of comprehensive emergency management. For instance, sustainable development does recognize the crucial roles of the public, private and non-profit, and even encourages more citizen participation in natural hazards mitigation (Mileti 1999). However, the sustainability concept is less clear about its relation to all types of triggering agents (McEntire 2000) and each phase of emergency management (McEntire 2000; Berke 1995). Therefore, CEM seems to

have some advantages over at least some of the recent approaches that have been espoused by academics and practitioners.

While the concept of comprehensive emergency management possesses many benefits, it is not devoid of certain drawbacks. For instance, one benefit of CEM is that it acknowledges disasters must be addressed through mitigation, preparedness, response and recovery. However, Neal illustrates that one phase of CEM may occur simultaneously during another phase (1997). As an example, tasks in response can occur while recovery is being performed. Nonetheless, the CEM concept does not necessarily indicate those activities that recur in each phase or are of paramount importance for emergency management. In essence, CEM may look at the administration of disaster activities over time (e.g. those before, during and after disaster) rather than through a functional lens.

The following paper attempts to address this deficiency by reviewing the research literature. Its goal is to draw out the themes that are common to each phase of comprehensive emergency management. The paper suggests that emergency managers should focus their attention on information/media, special populations, communication/cooperation/coordination, assessment, and planning. Before doing so, it will be necessary to review the four phases of comprehensive emergency management and discuss the methodology used to complete this paper.

Comprehensive Emergency Management

In the late nineteen seventies, the National Governor's Association (NGA) produced a document which entertained the idea of dividing the process of a disaster into a linear, circular, format called Comprehensive Emergency Management. An important aspect of the CEM model is the idea of integrating all types of hazards and participants into the different phases of the emergency management system.

The NGA report segmented the different aspects of the disaster process into four groups. By dividing the groups into distinct phases, the emergency manager is able to focus his/her work on the different aspects of the program. These phases are mitigation, preparedness, response, and recovery.

Considered the starting point of the disaster process, mitigation includes long-term actions taken to eliminate or reduce the degree of risk to human life and property from natural and technological hazards. It includes such things as the careful choice of location (for the purpose of risk reduction), building codes, dams, etc. (Drabek and Hoertmer 1993; Godshalk 1991)

The second phase is that of preparedness, which includes actions taken in advance of an emergency or disaster to develop operational capabilities and facilitate an effective response. It includes the creation of plans, community education, development of early warning system, acquisition of supplies, resource lists, training and exercises, evacuation plans, and shelter agreements. (Drabek and Hoertmer 1993; Kreps, 1991; Scanlon 1991)

At this point, a disaster or triggering agent occurs which creates the need for emergency response activities to deal with the disaster. Response includes actions

taken immediately before, during, or after an emergency or disaster to save lives and minimize property damage. It includes search and rescue, medical care, emergency operation center activation, and coordination of resources. (Drabek and Hoertmer 1993; Gillespie 1991; Perry 1991)

The last phase an event goes through is that of recovery, which includes activity to return vital life support systems to minimum operating standards or to normal or improved levels. It includes damage assessment, debris removal, infrastructure repair, rebuilding and relocation. (Drabek and Hoertmer 1993; Rubin 1991; Rubin, Saperstein, and Barbee 1985) In essence, this phase attempts to return the jurisdiction back to its pre-disaster state. The recovery phase will incorporate aspects of mitigation phase and so the community goes through the CEM process again.

Recurrent Themes of the Comprehensive Model

It is the proposition of this paper that the field of emergency management could be better served by applying a matrix of tasks to the comprehensive model. Within this matrix, the emergency manager will be able to draw out certain themes, which will be shown in each phase of disaster. By examining the concepts and ideas that are brought forth in the matrix of the comprehensive emergency management model, one can identify recurring patterns which will assist the emergency manager in focusing his/her program on the repetitive goals. The common themes include the importance of information and the media, special populations, communication and cooperation and coordination, assessment and planning.

Information and the media

Information dispersal and appropriate interaction with the media recur in every phase of the comprehensive emergency management model. For instance, the media can be a key component of a public education program wherein they are able to produce the videos or radio announcements to help promote mitigation. The media could be an invaluable tool for showing special populations how to protect their home. They may also assist in explaining the importance of insurance as well as the safe location of housing and other buildings. In preparedness, the media are tasked with the testing of the emergency broadcast system (EBS) on in television and radio outlets (Auf Der Heid 2000). In addition, the emergency manager can assist the media with plan creation for each medium (Quarantelli 1996). Activation of the EBS preceding an event is certainly an important aspect of response, which can save lives. Following the triggering agent, the media is also able to broadcast quickly and efficiently the opening and closing of shelters during recovery (Scanlon et al. 1985). The media is likewise an intricate part of the recovery process as far as they can denote the phone numbers and/or addresses of the relief and recovery agencies, such as the Federal Emergency Management Agency and the Small Business Administration. Therefore, the media has a close relationship to each phase of CEM.

Special populations

The consideration of special populations is another theme, which permeates all four phases of the model. Special populations refer to minorities, women, and children, poor, elderly, disabled, and incarcerated, etc.

In the mitigation phase, emergency managers must consider what steps can be taken to reduce the vulnerability of the aforementioned groups. The literature has shown that these groups are typically living in hazardous areas. Research has also shown these groups are more likely to die from a triggering agent than are others, especially in low-income countries. (Fothergill 1996; Haider et al. 1991) Steps must therefore be taken to reduce the vulnerability of these special populations before disaster occurs.

Coordinators must also examine the merits of planning for special populations in the preparedness phase as well. These groups will have different needs after an event than others. For instance, the elderly may need special medications, women may need day care for children, and ethnic groups may need multi-lingual disaster warning messages. It is imperative that emergency managers plan and prepare for these needs.

Special populations will also have to be addressed in the immediate post impact period after a disaster. As mentioned, these groups will need different resources from others, as they may not have the human or capital resources to properly respond and recover from an event. For instance, women will typically perform various response functions in and around the home. They will be involved in activities such as family preparation and clean up after the event (Fothergill 1996). Women may therefore need child care if they are to be able to seek outside assistance. In other situations, the emergency management personnel will need to consider appropriate food for the special populations located in community shelters.

Special populations groups will most certainly require unique measures for the short and long-term recovery periods of the disaster process. A number of unmet needs may occur during the recovery phase of an event as special populations may fall through the cracks of traditional relief organizations. In some cases, they may not qualify for disaster loans or they might not have any or the correct type of insurance to cover the damages incurred. (Morrow and Enarson 1994; Fothergill 1996; Bolin and Bolton 1986) The emergency manager will consequently need to coordinate with non-profit organizations in order to fill the needs of special populations. They can turn to entities such as volunteer organizations active in disasters and other to identify and address unmet needs. Special populations are therefore of paramount concern for the emergency manager.

Communication, cooperation and coordination

The idea of communication, cooperation and coordination is another theme that permeates the emergency management literature (McEntire 1998). These three concepts are important foundations to a well-managed emergency management program and disaster event.

Prior to disaster, it is important to use the knowledge, skills and abilities of all involved parties in the hazard mitigation and vulnerability reduction process. Partnerships are a key to getting people to work together in reducing vulnerability. The building of public/private partnerships is one way to provide a community wide concern to address vulnerabilities. A plethora of actors is required to create a safer environment. Geographers are able to identify and map dangerous or repetitive loss

structure through geographic information systems. Engineers are able to create increasingly hazard resistant buildings through the application of engineering principles and alternative building materials. Developers and urban planners can consider the hazards when designing new subdivisions. Politicians help to make hazards awareness part of the public's interest and a concern. Building officials can lobby to pass stringent building codes and provide enforcement of existing ones. (Gillespie 1991)

The various public agencies working together to assist in the community's overall preparedness is another theme. Preparedness in the CEM cycle looks to emphasize the jurisdiction's ability to respond to an event. The entire community can assist in performing and/or updating the community's capabilities assessment. The area will also work together through planning, training and exercising to increase the abilities of all involved agencies. By practicing together, the community will be better able to respond in an event. (Sikich 1996)

Communication, cooperation, and coordination are intricately sewn into the fabric of the response phase. Communication is commonly considered one of the first things to go wrong during any type of event, which may have an adverse impact on cooperation and coordination. The community may consequently suffer any number of problems, including duplication of work and the loss of citizen or responder lives. On the other hand, the emergency operations center can be the conduit for interagency communication, cooperation, and coordination (Scanlon 1994). Responders in the field will also rely on these activities as they work with emergent groups in the wake of an event. (Neal and Phillips 1995).

The recovery phase is laden with communication, cooperation and coordination issues. These recurrent themes are vital for the proper location and operation of disaster recovery centers, a quick and effective disaster declaration, and attempts to use the recovery phase to mitigate future hazards. Communication, cooperation and coordination are therefore extremely important to assist families, businesses and communities recover from a disaster event.

Assessment

Assessment is an intricate part of the emergency managers program. We find a number of different types of assessment utilized to provide the appropriate information to properly mitigate, prepare for, respond to and recover from a disaster event.

In the mitigation phase of the CEM process, communities must assess the most likely hazards that may/will impact the community. The community must discern the possible impacts from a host of different threats from floods, high wind, and terrorism to foot and mouth disease. In addition, another assessment that must be performed is the vulnerability analysis. This tool is used to find the areas that are most likely to be impacted by a particular hazard along with the population and infrastructure to be affected. (Sikich 1996) To look at the totality of the impact of the event is the risk assessment, which combines the hazard assessment and vulnerability assessments. In the risk assessment, the emergency manager is able to produce geographic

information system maps, which show the height of water in a particular area with a layover of the neighborhoods which may be inundated.

The preparedness phase seeks to find what the response capabilities of the jurisdiction will be. Through assessment, this phase understands weaknesses that can be corrected through tabletop and full-scale simulations. Emergency managers may also seek to refine the responders skills in order increase capacities during preparedness. (Scanlon 1991; Gillespie 1991)

Assessments need to be made in the response phase of the CEM process as well. Data must be gathered such as the amount of injuries incurred as well as fatalities, and damaged or destroyed structures. Assessment will also assist in evacuations and cordoning off particular areas which may be deemed unsafe for non-response personnel. Emergency managers will also need to examine response efforts, including the location and use of resources to maximize manpower. (Schneider 1995)

The primary assessment data to be collected in the recovery phase of the event deals with the amount of damage occurred in the wake of the event. This information is of the utmost importance as this information is what determines the amount and type of disaster assistance the government will provide. In receiving a Presidential Disaster Declaration, a jurisdiction must efficiently and effectively obtain data on the number, type, and amount of damage done to structures and infrastructure. Assessments must also be made to determine the debris removal requirements for the jurisdiction. (Schneider 1995; Schwab et al. 1998) Assessment is therefore a recurring activity for the emergency manager.

Planning

Another recurring theme, which occurs in all phases of emergency management, is that of planning. Emergency managers are required to create a number of plans that will pertain to the different areas of the agency. During the mitigation phase, the emergency manager writes plans to reduce the jurisdiction's vulnerability. Federal, state and other authorities give local emergency managers model plans as well as minimum emergency operations planning requirements. Via planning, communities are able to take long-term steps to reduce the exposure of its citizens to hazards. Communities are therefore better able to identify flood-prone structures for buy-out via grant acquisition (Gillespie 1991)

In preparedness, the emergency manager must evaluate and assess the worth of the documents, such as the emergency operations plan, to determine weaknesses. They must also plan for exercises by determining such things as the time, location, participants, and goals of the training. (Scanlon 1991) Attempting to involve community-wide partners in the planning process will thus ensure a more effective response.

Planning for the response phase must guarantee that responders will coordinate. This may help to minimize unwanted duplication of efforts and other waste in the response process. Emergency managers must plan to perform or coordinate emergency support functions including search and rescue, mass care, or firefighting.

Planning is also important for recovery. Special populations as mentioned earlier, may be unable to assist themselves in responding to an event. The emergency manager can use recovery to educate special populations on mitigation practices and overcome the quick fix of placing vulnerable people back in harms way. They must also plan for typical problems that occur after an event such as political turmoil owing to more stringent building codes and stricter building codes. Emergency managers also need to be planning for damage assessment, debris removal, and whether to rebuild or relocate the homes in affected areas. (Schwab et al. 1998)

Interrelationships of Common Themes

Many of the previously mentioned themes are dependent on each other in order to establish a strong emergency management program. The following are just a few of the inter-relationship that can be derived from this examination of comprehensive emergency management.

Information, for instance, is needed to help the special populations during each phase of disaster. The print, radio, and television media can provide educational segments and stories directed towards special populations in order to explain the benefit of acquiring insurance on homes and property. The media may also help special populations prepare disaster kits or conduct disaster drills with their families. The media also play an important role in warning and evacuating special populations during response, and they likewise give valuable information to vulnerable populations in order to help them find shelter and additional support.

Accurate and prompt information is important for communication, cooperation, and coordination in the comprehensive emergency management process. Information needs to be communicated to each of the stakeholders in mitigation so that they are better able to consider an appropriate level of risk when developing an area for urban or rural use. Information about the different roles of agencies is also required to created and maintain an effective emergency operations plan for a community. During response, the emergency operations center can work closely with the media to reduce the amount of misinformation and rumors that may occur in the wake of an event. Situation reports may also be disseminated to those in and outside of the affected community in order to acquire the necessary resources for recovery.

Matrix of Comprehensive Emergency Management and Recurrent Themes

	Mitigation	Preparedness	Response	Recovery
Information & Media	Public Education Programs to reduce vulnerability	Involved in planning process	Activation of Emergency Broadcast System	Publicity of Disaster Recovery Centers.
Special Populations	Educate on techniques to reduce vulnerability	Arrange for anticipated needs	Take action to meet immediate needs	Address short and long-term requirements to reduce future vulnerability
Communication, Cooperation and Coordination	Draw in a host actors in gathering data for risk assessment	Involve all responding agencies in preparing for an event and	Utilization of Incident Command System and Emergency Operations	Facilitate interaction of agencies to maximize recovery resources

		exercise	Centers	
Assessment	Assess hazards and vulnerabilities to determine risk	Perform capabilities assessment of community	Appraise evacuation needs and casualties to determine appropriate response	Perform damage assessments for disaster declaration and mitigation opportunities
Planning	Apply risk assessment to capabilities assessment	Create emergency operations plan and plan exercises to test plan	Utilize plans and maps to arrange for effective and efficient response	Implement recovery plan to assist those with special needs and community at large

Implications

A few important implications can be drawn from this exploration of the recurring themes of comprehensive emergency management. For the academic, this research illustrates that the complex relationships between the different themes and phases need to be the basis for efforts to generate knowledge for emergency management professionals. More research should therefore be conducted on information and the media, special populations, communication, cooperation and coordination, and assessment and planning. For the practitioner, this research underscores the necessary activities that emergency managers should focus on in order to improve efforts to reduce disasters in both quantitative and qualitative terms. Enhancing these five areas of emergency management could bring about significant changes in our ability to prevent and respond to disaster.

Conclusion

This paper has attempted to explore the redundant tasks in the Comprehensive Emergency Management model. With the matrix that has been developed in this article, emergency managers may be better able to concentrate on those crucial tasks that promote an effective emergency management program. These activities include: employing the use of the media; preparing special needs groups; increasing coordination, cooperation, and communication; using appropriate assessment in all phases; and promoting effective planning.

Nevertheless, this research should be regarded as preliminary. Further research is undoubtedly needed to confirm the importance of the above themes, and to determine if additional recurring patterns should be underscored for practitioners. In addition, more work should focus on the complex interactions among the themes and phases of comprehensive emergency management. Likewise, future research should focus on how the mentioned themes impact various emergency management organizations. In short, follow up work will be needed to determine the merit of looking at the recurring themes of Comprehensive Emergency Management.

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