Number 203 August 2008

QUICK RESPONSE REPORT

NIMS in Action: A Case Study of the System's Use and Utility

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Abstract

Given the intent of the National Incident Management System (NIMS) mandate to alter local and state disaster operating procedures and nationally standardize disaster response across a wide array of agencies and organizations, it was important to study the degree to which its implementation has been successful. Specifically, the focus of this research project was to determine how NIMS was used in a disaster situation and to identify what factors affected the system's usefulness.

Quick Response Grant research was conducted in the aftermath of a tornado in late spring 2008. Data were gathered through interviews with state and local emergency management personnel, observation at the state and local Emergency Operations Center (EOC), the collection of local and state documentation relevant to the disaster response, and publicly available news media reports. The findings of the research are presented and the relevance of the findings for both the discipline and field of emergency management are discussed.

Introduction

In 2005, the federal government mandated that levels of government, as well as organizations involved directly in disaster response, use the National Incident Management System (NIMS) in all emergencies and disasters. The use of NIMS is a condition for receiving homeland security preparedness funding. The Department of Homeland Security (DHS) defines NIMS as "a consistent doctrinal framework for incident management at all jurisdictional levels regardless of the cause, size, or complexity of the incident" (Department of Homeland Security 2004, 1). According to the Federal Emergency Management Agency (FEMA), the NIMS framework specifies,

> what needs to be done to prevent, protect against, respond to, and recover from a major event; how it needs to be done; and how well it needs to be done. These efforts align Federal, State, Local, and Tribal entities; the private sector; and nongovernmental agencies to provide an effective and efficient national structure for preparedness, incident management, and emergency response. (Federal Emergency Management Agency 2006, 22)

The aim of NIMS is to provide a standardized emergency management framework from which agencies and organizations are able to operate in emergencies and disasters. With this said, it is important to study the degree to which its implementation has been successful. The focus of this research project was how NIMS was used in a disaster situation and whether NIMS use was perceived as beneficial to the overall response.

Literature Review

Any research on the implementation of NIMS must necessarily consider the disaster response literature. A review of the literature indicates that a number of factors influence how a disaster response unfolds. Key features include the planning process,

state of preparedness, the role and organization of an emergency operations center (EOC), and an evaluation of effective response. The central concern of this research is how the literature relates to NIMS and its potential for use in a disaster situation. Accordingly, a brief review of the literature on this topic is included.

Planning process and preparedness

Auf der Heide articulates the importance of having an emergency operations plan, the resources to carry out that plan, parties with knowledge of the plan, and buy-in from the agencies and organizations expected to implement the plan (1989). Training and exercising the plan is also critical to an efficient and effective response (Daines 1991; Peterson and Perry 1999). As Dynes stated, "coordination can be enhanced through common planning and rehearsal activities…" (1994, 150). These planning activities should improve cross-agency communication, information flow, and interagency coordination and should clarify leadership roles and expectations—four critical issues in disaster response (Auf der Heide 1989; Drabek 1985; Quarantelli 1988).

Emergency Operations Centers (EOCs)

Emergency operations centers can be important to disaster response (Dynes 1994; Perry 1991). Tierney et al. noted emergency response operations are "more effective when there is an identified leader with both positional power (especially legitimate authority) and personal power (e.g., expertise) operating through a central coordinating mechanism such as an emergency operations center" (2001, 144). McEntire found response "coordination was facilitated when there is a strong leadership, a team orientation, experience in prior disasters, and effective EOC management" (2007, 295). Kweit and Kweit similarly found that effectiveness of administrative structure or network, leadership, and culture in the EOC affected overall disaster response (2006).

Other Response Factors

Taylor, Zucher, and Key found that the "availability of relevant social resources, the existence of informal social networks which allowed quick coordination, and the social-psychological processes which for a time shifted the motivational and group structures of the city" were critical to response (1970, 139). Later, Dynes, Quarantelli, and Kreps suggested that a variety of factors are related to how disaster response unfolds, such as the degree of uncertainty, urgency, emergency consensus, citizen role, contractual and impersonal relations, and convergence (1972). Tierney, Lindell, and Perry cited similar factors (2001). Comfort, Ko, and Zaorecki argued that a combination of disaster characteristics and information flow are important determinants of disaster response (2004). Perceptions of response also matter; therefore, the handling of public information and the media cannot be ignored during the response (Scanlon and Alldred 1982; Scanlon et al. 1985). The work of these authors suggests there are many factors that affect, alter, or influence how organizations respond to disaster.

Evaluating an Effective Response

Wenger, Quarantelli, and Dynes posited that a successful response includes the following characteristics:

> excellent information collection and distribution, a fully-staffed and functioning EOC, adequate human and material resources, a specialized division of labor among responding units with the coordination of those units by one agency, a legitimated authority structure, integrated and coordinated relationships with outside organizations, mutually beneficial and effective relationships between emergency officials and mass media representatives, and 'reality-based' activities. (1986, 21)

Fischer cited similar factors for evaluating an effective disaster response, adding previous disaster experience, proper task delegation, and coordination to the list (1998, 93). Drabek found that a "high level of domain consensus, use of more coordination strategies by the local emergency manager during the response, a lengthy period of forewarning, frequent disaster training activities and actual responses during the prior two years, and frequent past agency contact" led to a more effective disaster response (2005, 65-66). Ultimately, as the National Research Council put it, "…effective responses depend on the ability of organizations to simultaneously sustain structure and allow for flexibility in the face of rapidly changing disaster conditions and unexpected demands" (2006, 143).

Linking the Disaster Response Literature to NIMS

There have been many other articles and books that echo or add to the preceding findings and conclusions (see, for instance, Dynes and Tierney 1994; Koelher, Kress and Miller 2001; Tierney, Lindell, and Perry 2001). How the findings from the disaster re-

sponse literature relate to NIMS is important. None of the factors discussed thus far suggest the necessity of a system like NIMS for an effective response or merit the development of a comprehensive system like NIMS to avoid potential response issues. In fact, as Koehler, Kress and Miller stated:

> due to some or all of these factors, the planned emergency response system will probably not be the one that emerges. The one that does emerge, most likely, will have a tendency to be locally self-organizing, somewhat unpredictable in its interorganizational linkages, and likely to succeed or fail in unpredictable ways. (2001, 295)

And yet, a number of authors have argued that a system like NIMS could or should be applied and effectively implemented at all levels of government (Annelli 2006; Bigley and Roberts 2001; Cole 2000; Lester and Krejci 2007; Lindell, Perry, and Prater 2005; Schneider 1992, 1995; Siegel 1985). For instance, Reardon states, "through NIMS, we should all realize that if we work within the ICS [Incident Command System] we would all have similar organizational structures that will blend or overlay those of others" (2005, 76), or as Lindell, Perry, and Prater argued, standardization can "increase the reliability of emergency response operations because its comprehensive structure can decrease the likelihood that important functions will be overlooked in the heat of emergency response" (2004, 5).

Despite the support for a system like NIMS in some of the literature, there is also literature that suggests a system like NIMS might be limited in usefulness. Wenger, Quarantelli, and Dynes found that the Incident Command System (ICS), on which NIMS was built, is limited for overall disaster management (1990, 12). Variation in the manifestation of ICS between departments, problems with command and control, lack of integration of other organizations into ICS structure, and issues with interorganizational communication and coordination were among their issues with the system (Wenger, Quarantelli, and Dynes 1990). Buck, Aguirre, and Trainor argued that problems with ICS are not due to the system itself, but rather how people and organizations implement the system (2006). They conclude that "it is unlikely that the system will ever be fully implemented for all phases and actors in disasters" (21).

Conducting research on the implementation of NIMS in the immediate wake of Hurricane Katrina, Neal and Webb (2006) found issues related to training, organizational culture, and lack of buy-in by those expected to embrace NIMS. These issues affected the extent to which NIMS was used in respone to the hurricane. Adding to the literature specifically on NIMS, Jensen (née Leifeld) researched perceptions about and implementation of NIMS in three largely rural states and found that emergency manager perceptions and local reality (e.g., lack of buy-in, rural/urban differences, reliance on volunteers, wishes of elected officials, the state's role as buffer, and expectations the state would take over in a disaster) prevented NIMS from being implemented as designed (2007).

There is limited empirical research available on NIMS and ICS. Some of the existing literature might lead one to believe that a jurisdiction could implement a system like NIMS effectively and efficiently in a disaster situation. Clearly, if the structure, processes, and terminology of all of a jurisdiction's response organizations mimicked one another, there would be benefits to disaster response. It is apparent, however, that not all of the literature suggests NIMS would be used or useful in a disaster situation. Furthermore, the disaster response literature does not imply that mandating and adopting a system like NIMS would solve typical response issues, mitigate factors that affect response efforts, or be important in evaluating an effective response.

A Synopsis of the Tornado

In the interest of protecting the locations where research was conducted, the names of the city and state where research was conducted are cloaked. A pseudonym of State X represents the state and City X signifies the city where research was conducted. Because a guarantee of confidentiality was given to interviewees, the names of individuals who participated in this project are not used in the report.

In the late spring of 2008, a series of tornadoes struck State X. The damage was concentrated in City X where an EF-3 tornado touched down. Within City X, the damage was concentrated in four neighborhoods.

The local hospital reported treating more than 70 patients. Local emergency medical services, medical centers, and doctors offices treated more than 100 other patients. Although fatalities where unknown for the first 24 hours, there were no deaths caused by the tornado. The community sustained almost $30 million in private damage and approximately $3 million in public damage. The tornado destroyed nearly 60 homes and businesses, caused major damage to 75 homes and businesses, and left more than 300

homes and businesses with limited or minor damage.

The city's inexperience with tornadoes was apparent. The tornado was the first to directly hit the city. It was also the strongest tornado in the state since 1993.

The Tornado, the City, and NIMS as a Case Study

Many factors made the City X Tornado a fascinating case study of NIMS' use and utility. Factors noted below—such as past disaster experience, resources, the status of emergency management in the city, the surrounding region and state, city demographics, and characteristics of the disaster—set the stage for the examination of NIMS in City X.

Experience

The series of tornadoes struck a state experienced with natural disasters. Prone to hurricanes and floods, State X had developed its capacity and capability for responding to and recovering from disasters by learning from experience, and City X had responded to a hurricane five years ago. The research literature indicates that past disaster experience can lead to the adoption of measures aimed at improving communications and coordination (Drabek 2005; Dynes 1994, McEntire 2007; Tierney, Lindell, and Perry 2001). These measures are the same ones NIMS purports to promote through the standardization of terminology, structure, and cross-organizational/jurisdictional processes. Therefore, NIMS use would perhaps be more evident and perceived as having more utility in a jurisdiction with past disaster experience—such as the one where the research was conducted.

Status of Emergency Management and Resources

The status of emergency management and the resources available for emergency management are quite high in City X, partially because of experience with disasters, but also because of the existence of the Urban Area Security Initiative (UASI) and several military installations in the state. The elevated status of emergency management and available resources in the disaster area allowed the state, the region surrounding City X, and City X itself to engage in activities that other states and regions cannot undertake as readily. These activities include adopting a statewide mutual aid agreement, planning through numerous active regional committees, and participating in multiple multi-jurisdictional, multi-organizational exercises. City X also has a population, tax base, and city structure that can support an emergency management program and the demands related to the maintenance of such a program. Jensen found that rural areas with few resources are unable to implement NIMS in the manner it was designed (2007). The City X disaster was an opportunity to see the connection between resources and the use and usefulness of NIMS to disaster response.

Needs and Emergence

The literature shows that an organized disaster response that meets both disaster- and response-generated needs can be hindered when disaster damage is severe and widespread (Kreps 1983, 1989; National Research Council 2006; Wenger, Quarantelli, and Dynes 1990). Unmet needs in disaster situations often result in the emergence of groups to meet those needs (Comfort 1999; Drabek and McEntire 2002; Kendra and Wachtendorf 2002; Kreps 1989; Mendonça and Wallace 2004; Quarantelli 1983; Schneider 1992; Stallings and Quarantelli 1985). Emergent groups can be very helpful in local situations, but they can conflict with more formal response structures (Lindell, Perry, and Prater 2005; Schneider 1995).

The damage from the City X Tornado, while severe, was geographically concentrated and the four neighborhoods struck by the tornado were demographically similar. The neighborhoods consisted largely of insured, single-family homes in a predominately middle-class area. Although the needs generated by the tornado impact required surrounding jurisdictions to respond with mutual aid and the state to provide limited assistance, multiple states were not affected and multiple counties did not suffer widespread damage from the storm. Furthermore, disaster and the response did not exceed what was planned for in the jurisdiction's emergency operations plan. Since this situation would lead one to expect few groups would emerge to meet unmet needs, perhaps NIMS would be more easily used.

Based on the previous discussion, it was expected that, if NIMS were to be fully implemented anywhere, it would be in this state and in this region. This particular disaster, therefore, was well-suited for research on the topic.

Methodology

A two-person research team from North Dakota State University's Emergency Management Program

was in State X the day after the tornado struck. Upon arrival, the research team spent two days at the State X Emergency Operations Center (EOC). The researchers then spent two-and-a-half days at the local EOC in City X.

This research project used triangulated qualitative research methods. The primary research method was face-to-face interviews using purposive critical case sampling (Ritchie and Lewis 2003). Interviewees were asked open-ended questions regarding their emergency management experience, the disaster, their role in the disaster, the role NIMS played in the disaster response, their perceptions of why NIMS was or was not used, and their general opinions about NIMS.

The research team conducted 37 interviews with state and local personnel involved in the disaster response and short-term recovery. The researchers completed 18 interviews at the state EOC, 19 interviews at the local EOC, and participated in a number of informal conversations with EOC personnel in both locations. Among those interviewed were the local emergency manager, fire department personnel, public health representatives, personnel from voluntary organizations, personnel from the State Department of Emergency Services/Management, and regional emergency management representatives. In some cases, the primary researcher conducted follow-up telephone interviews. Researchers spoke with at least one person from each emergency support function (ESF) represented in the local EOC, as well as individuals who had been in the incident command post in the immediate wake of the disaster.

Content analysis was used to examine documentation of the disaster response in the news media and on government forms. Specifically, the emergency declaration, state and local incident action reports, Incident Command Structure forms, damage assessments, and WebEOC screens were analyzed. State and local personnel provided all documentation on site.

Finally, the researchers used participant observation. In the areas where disaster response and short-term recovery activities were coordinated, the research team observed what activities were taking place, what organizations were involved, and the use of NIMS.

Analysis was conducted using the analytic hierarchy described by Ritchie and Lewis. "The analytic hierarchy refers to the process through which qualitative 'findings' are built from the original raw data" (Ritchie and Lewis 2003, 217). The hierarchical process began with data management that entailed assessing, coding, sorting, and integrating the data (Ritchie, Spencer, and O'Conner 2003, 220-237). This step was followed by analysis of descriptive accounts, which included the identification of dimensions, the refinement of categories, and classification of data (Ritchie, Spencer, and O'Conner 2003, 237-244). Analysis stopped short of the development of typologies. The final step in the analytic hierarchy is generating explanatory accounts. During this stage, patterns were detected and explanations were developed (Ritchie, Spencer, and O'Conner 2003, 248-257).

The Response in Brief

The following brief reconstruction of the City X response effort was gleaned from state and city incident action reports, WebEOC, newspaper articles, and informal interviews conducted at both the state and city EOCs.

The first report of damage was received by the 911 center at 4:05 p.m. and the city declared a local emergency at 4:25 p.m. A four-part sequence of response-related activities began. First, local fire and rescue, emergency medical services, and law enforcement officers were dispatched to affected neighborhoods and dealt with issues of life safety. Second, mutual aid agreements were activated requesting medical units, a metropolitan medical response team, fire engine and ladder trucks, a tactical rescue vehicle, a mobile command post, and law enforcement officers from neighboring jurisdictions. Within one hour of the tornadoes' touchdown, mutual aid began to arrive on scene. Search and rescue teams, brought in as a result of the mutual aid agreements, searched the rubble for injured or trapped victims through the night. Third, an incident command post (ICP) was established at a local hospital, a site adjacent to the most affected areas. During the early hours of the response, the ICP ordered resources and called in mutual aid. A combination of local and mutual aid-activated paramedics, law enforcement, firefighters, police officers, and canine search and rescue teams worked out of the ICP. Fourth, the local emergency manager activated the city EOC. In accordance with the city's emergency operations plan, the local emergency manager sent a mass text message to key city representatives alerting them of the situation and requesting their presence at the EOC. By 5:30 p.m., a pre-designated room, ordinarily used for meetings, had been transformed into an EOC and assembled were the city manager and representatives

from social services, public health, public affairs, city planning, finance, fire, rescue, law enforcement, and others. Due to an initial loss of communications, for the first two-and-a-half hours after the tornado, the city EOC relayed information through a neighboring city's EOC.

The early hours of the response were characterized by uncertainty. Limited information and concern about possible deaths and people trapped beneath rubble heightened the perception of chaos at the city EOC and ICP. Despite that, the ICP quickly regained a sense of control and representatives from various agencies in the EOC were able to cover issues related to curfew, road status, resident reentry to affected neighborhoods, emergency aid, assistance to seniors, and progress on preliminary damage assessments, pets, and schools.

By 7 p.m., a shelter had been established at a local high school. Police guarded entry points and patrolled impacted neighborhoods. By 9 p.m.—within five hours of the tornado—city officials briefed the press with information regarding the number and status of the injured, property damage, power outages, emergency shelters, mandatory evacuations, school cancellations, weather protection, recovery center, water quality, vandals/looting, and fraud. By the next morning, the city mayor's message to the press and the citizens of the city was that the city was in control.

By the end of the day Tuesday, an incident management team (IMT) had been requested through the state and arrived on scene to support local EOC activities, building inspectors had assessed more than 300 properties, and regular meetings with the press had been established. Less than 24 hours after the tornadoes' impact, when the search and rescue canine units completed their last sweep of the devastated neighborhoods, the response period ended and short-term recovery began. The search and rescue teams did not find any victims.

The focus of this research was the role NIMS played in the disaster response. In addition, the respondents' perceptions of NIMS usefulness were explored.

Major Findings

The first findings section begins by addressing state and local interviewees' impressions of how NIMS was used in the City X disaster and what the researchers knew about the use of NIMS from content analysis and participant observation. There are two parts to the discussion of the use of NIMS in the City X disaster: how the state perceived the use of NIMS and how the local jurisdiction perceived the use of NIMS.

The second findings section presents the factors interviewees indicated they believed influenced the usefulness or utility of NIMS in the City X disaster. This second section relies primarily on interview data. It is also organized in two parts: the first dealing with state perceptions and the second with local perceptions.

The Use of NIMS

The data collected from the state revealed four predominate themes regarding the use of NIMS in the City X response. The themes include successful response, ICS versus NIMS, the EOC-NIMS disconnect, and the role of outside assistance. The analysis of data collected from the local EOC also revealed four major themes. The themes from the local EOC include ICS versus NIMS, EOC-NIMS disconnect, outside assistance, and response versus short-term recovery.

State View

Successful Response

By all accounts—including that of the state governor, local newspapers, residents, and neighboring jurisdictions—the City X response was both efficient and focused on meeting the needs of its residents. A state employee interviewed also considered the City X response a success.

Indicating what he saw as critical elements to success, the state emergency management coordinator said:

> They've activated their debris management contracts. Last I heard, they are working and they are taking responsibility for all of the public areas and kind of expanded that to clearing the streets and subdivisions, some of which isn't the city's responsibility; but rather than figuring out whose stuff is out in the streets, they are taking care of all of that. They did a real good job with search and rescue and all of that and getting people to the hospital that needed to be…They have taken care of security issues. They've managed traffic really well. They've put out a good public message… They set up the one stop [disaster assistance] center down there.

Other interviewees cited the following factors as contributing to the successful execution of the response:

- The locality had significant capability and capacity to manage disasters

- The locality took care of critical issues early in the response (e.g., life safety, security, public information)
- The locality stayed citizen-focused throughout its response
- Long-standing mutual aid agreements performed well
- The people involved in the response knew their jobs exceptionally well
- The locality had prior practice through exercises and drills

In its preparedness component, the NIMS document deals with the management of pre-existing contracts for essential services and anticipated needs, mutual aid agreements, security, and the handling of public information, among other issues. Insofar as City X was able to use the concepts required in the preparedness component, NIMS was certainly evidenced, yet when these activities were credited with contributing to City X's response, interviewees did not speak about the successful response in the context of NIMS. Furthermore, the extent to which these preparedness and response activities were prompted by the NIMS mandate— as opposed to practices in place before NIMS—was unclear.

ICS Versus NIMS

While virtually all of the people interviewed at the state EOC had a previous or present role in the state's response to the City X tornado, only a few had actually been to City X since the event. Therefore, interviewees based their opinions about the locality's use of NIMS on secondhand information, conversations with local people working in the response, or information provided in state briefings and/or WebEOC.

It was generally held by those interviewed that ICS was used in the first 24 hours at the ICP, but other than that, the use of NIMS was not apparent. As one interviewee stated, "initially they actually had NIMS in place with the mindset of it was more of an incident command post and incident command system mindset." Or as another commented:

> It took them awhile to get up and running because their first item was 200 injured plus search and rescue for whoever was missing. But they were establishing an incident command on the scene and in the field and then they came into incident command in their EOC and got that up and running.

Interviewees said elements of ICS used included designation of an on-scene incident commander, unity of command, designation and use of an incident command post (ICP) and staging area, common terminology, and integrated communications among on-scene response organizations. The use of unified command, span of control, comprehensive resource management, and the designation or division of duties according to organizational roles (e.g., logistics, finance and administration, planning, operations) were not noted by those interviewed. Some thought that general NIMS concepts were used, such as command and control and common terminology, but did not specifically note the use of NIMS or ICS. Regardless of how interviewees evaluated the local use of NIMS in the disaster response, the majority noted that it was not ICS or NIMS that allowed City X and neighboring jurisdictions to work together, as much as it was the relationships and the regional planning activities and exercises undertaken before the disaster.

The EOC-NIMS Disconnect

State interviewees reported coordination issues in the EOC during the early hours of the response, as well as communication and resource management issues between the ICP and EOC. The NIMS document states:

> EOCs may be organized and staffed in a variety of ways. Regardless of the specific organizational structure used, EOCs should include the following core functions: coordination; communications; resource dispatch and tracking; and information collection, analysis, and dissemination. (Department of Homeland Security 2004, 34)

While NIMS is specific about on-scene management of incidents, it is less specific about EOCs and their interaction, or interface, with the ICP. The NIMS document states that during the preparedness phase "mechanisms for reporting information to organizational work centers and EOCs" should be worked out (Department of Homeland Security 2004, 29) and that "ICPs should also be linked to… EOCs to ensure effective and efficient incident management" (33), but it does not specifically state how they should be related.

While NIMS does state what EOCs should do, there is very little within the document or NIMS/ICS training to prepare EOC staff. Interviewees thought that an EOC-NIMS disconnect existed, in part, because of this lack of guidance and therefore were not surprised that the local jurisdiction had trouble with its ICP interface.

Outside Assistance

Other than ICS, there were no reports of the greater NIMS being used during the response period in City X, to the extent that state EOC personnel were aware. State interviewees were not surprised that NIMS was not initially being fully implemented in City X. "At the local level, especially during a disaster, they start out running and gunning."

"No one sat down and said here is the recipe card," said one interviewee. "Let's start checking them off as we do them to maintain compliance."

NIMS was eventually used, however. Virtually every state EOC employee noted a sudden shift towards implementing NIMS—facilitated by the arrival of an incident management team (IMT) on Tuesday evening, after the response period had ended and short-term recovery was beginning. An interviewee stated:

> We got a request from City X to send an IMT because the EOC operator was all they got, and he was running the whole show. I think he winded up being exhausted. One of the smartest things the man did was he realized, look, I can't be everything. So he asked for an IMT.

The IMT role was described by one state EOC employee in this way:

> They are people from the outside coming in to help. They can level the playing field and give a lot of assistance. That is why they need to be trained in NIMS and have all of their certifications and they can help the process.

For instance, state interviewees noted that the greater NIMS was implemented in City X through the use of key organizational elements such as resource management, facilitation of situational awareness and planning using ICS forms (e.g., the 214), development and sharing of an incident action plan (IAP), organizational charts identifing those involved in the response, sharing information, and holding briefings. A more thorough discussion of the IMT role is included below.

Local View

Although expressed differently, the interviewees at the local EOC shared the state participants' view of NIMS use in the City X tornado response for the most part.

ICS and the Response

Interviewees at the local EOC noted ICS was the most used component of NIMS in the disaster response. Within an hour of the tornado, an ICP was set up at the local hospital. During the first hours of the response, there was some confusion about roles at the ICP. Parts of ICS were reportedly used but the situation was "disorganized and everyone focused on their own tasks," according to interviewees. Because people and agencies had already been dispatched—"dispatches were going crazy"—and were on site, it took time to "sort out where people were, where people needed to go, and transfer and assign duties."

ICS was not completely used, according to interviewees. For instance, the ICP was not concerned about finance, administration, and planning. "That's more the EOC," one interviewee said. Another person, who had been at the ICP at the beginning, stated, "I feel like we did what we could, in as organized a way as we could, to make sure the public was safe." Although several structural elements of ICS were not used, the issue noted primarily for improvement by interviewees was communication and coordination with the EOC. "It was happening so fast we couldn't get through or take the time to try to get through to the EOC, then as control came we interacted more," said one. Local EOC interviewees confirmed state participant reports that resource management did not proceed as planned—resources were indeed ordered by the ICP rather than the EOC. As the emergency services coordinator stated, the ICP "did what they needed to do."

The EOC-NIMS Disconnect

Both the ICP and EOC serve an important function in incident management, but the EOC operates at a different level than the ICP, according to interviewees. As one person put it, "We [the EOC] are dealing with the bigger picture. Our goals are oriented toward the whole function rather than the pieces and parts." Although, like state interviewees, local EOC staff reported coordination and resource management issues, they were able to monitor radio chatter and glean much-needed information even though it wasn't being fed to them from the field.

Resource management was taking place primarily through the ICP, but also through the various disciplines or functions represented in the EOC. In some cases, pre-existing contracts were activated. Yet, centralized and comprehensive resource management wasn't in accordance with the NIMS

Resource Management component. For the most part, however, resource management and mutual aid requests were simple, and—according to interviewees—the situation did not require the use of the Resource Management component in the way the NIMS document suggests. Furthermore, the establishment of personnel qualifications was not necessary because the emergency medical services, search and rescue, canine units, and fire and law enforcement personnel on scene through mutual aid were essentially deemed local. It was evident through participant observation that those involved in the response did not need credentialing to be recognized as capable of helping. It was also apparent that the situation did not require the use of certification standards and resource typing to ensure the neighboring jurisdictions knew what was meant when a ladder truck or police officers to help with security were requested. Interviewees confirmed these observations, but as more than one interviewee pointed out, "in a national level incident all this would be really hard to figure out."

An additional issue noted by local EOC interviewees was that some people were in the EOC and had no apparent formal role, or did not know what their role should be. Although binders containing information about duties and responsibilities associated with all of the functions had been developed before the disaster, in the heat of the disaster response they had not been pulled off the shelf.

Outside Assistance

As previously discussed, two five-member IMTs—one from the northern part of the state and another from the City X region—travelled to City X to support work in the EOC. One person described IMT arrival as bringing a sense of order. Another said "it really came together when the IMT got here."

> Especially when the IMT came in and you could see it get going. The first night… it was kind of "let's just get stuff done and make sure everyone is okay and search and rescue."

The purpose of the teams was not just to provide relief to exhausted EOC workers, but also to "translate" what was happening at the local jurisdiction into what was perceived as NIMS language, requests, and paperwork. "Without our support the response would have got done, but it would have been disorganized, not as efficient or effective, and more expensive." For the most part, IMTs filled the functional areas of ICS and were supported, or supporting, the various functional areas represented.

As the first IMT was leaving and the team from neighboring jurisdiction was relieving them, the team was thanked in the morning briefing for providing "structured organization." They facilitated the preparation and completion of daily incident action plans (IAPs), daily briefings, organizational charts, and ICS forms to organize and disseminate or share information. Those interviewed said the teams had made a significant contribution.

Response Versus Short-Term Recovery

The NIMS document provides for the phases of disaster management. NIMS "applies across all phases of incident management: prevention, preparedness, response, recovery, and mitigation" (Department of Homeland Security 2004, 2), but when it comes to recovery and recovery management there is little to no guidance. Yet, in this case, local EOC interviewees reported a greater use of NIMS as the focus changed from life safety to short-term recovery. Respondents noted that management was difficult in the response period, but in short-term recovery strategic management was used to document response and ongoing recovery efforts, as well as financial aspects of the response. It was in this phase that the EOC began to use ICS concepts and forms because they quickly and concisely captured progress, changes, new information, activities, and other elements.

CITY X used ICS forms 204, 205, 206, and 214 to organize and document short-term recovery efforts with respect to field assignments, communications planning, medical planning, and units operational activities. During more than one briefing the need for 214 forms to be turned in was stressed, one IMT member stating, "I can't emphasize enough how important paperwork is for recovery." The forms were not used by all involved, but it was noted that the forms should have been—and had they been more widely used earlier in the response, people would have been on the same page more quickly. Some individuals seemed motivated to use these tools as a way to bring about a more efficient recovery, while others appeared to be using the forms simply to satisfy higher powers. One person was overheard saying "we need it for FEMA."

In addition to the aforementioned forms, the city also used modified versions of ICS forms 201, 202, 203 in their Incident Action Plan (IAP). By the time the research team began participant observa-

tion at the local EOC, the EOC personnel considered IAPs critical. As one interviewee stated, "IAPs are vital to situational awareness and keeping us on the same page, even though a lot of trees get killed." The designated planning section chief stated in a morning briefing, "These IAPs are important to the big picture. Make sure you get this out to everyone." It was fascinating that elements of ICS, designed for onsite incident management and not required or even suggested for EOC implementation by NIMS, was widely perceived to be useful. Furthermore, it was interesting that many interviewees seemed unaware the ICS elements used in the EOC were not a part of NIMS that they were required to use.

The Utility of NIMS

While the previous discussion focused on the use or non-use of NIMS in the City X disaster response, the following section discusses respondent perceptions of NIMS usefulness to people and organizations involved in the response, as well as the overall response effort. This section is also divided into state and local perceptions. The discovery that NIMS use, or lack thereof, was not relevant to the state's ability to support the City X response revealed a primary theme: It didn't make a difference."

Three subthemes—situation, scale, and local capability—are expanded on in the context of this theme. The data from the local EOC revealed an additional theme of hindsight—the type of disaster, the amount of time from initial NIMS training to the event, and consistency and continuity of NIMS use at the local level are discussed.

State View: It Didn't Make a Difference

Situational Awareness

One of the most striking observations from the state EOC was the state's dependence on local governments for information. Information is vital to the state and its ability to help local governments. How they get the information or the form it takes is not as important as "being fed," as one interviewee put it. In the case of the City X tornado, the state EOC received information in a number of ways, such as personal contact, WebEOC updates, phone and WebEOC resource requests, and communications from the regional coordinator and IMT.

The state was satisfied as long as it was getting the information they needed to support local efforts, state departments, the governor's office, and FEMA, although state EOC personnel could tell that resource requests were not coming in according to how the use of NIMS would have dictated. Early rumors of chaos, poor integration of Voluntary Organizations Active in Disaster (VOAD) in the local EOC, and local command and control conflicts did not interfere with the state's ability to help. In this disaster, the use or non-use of NIMS did not appear to facilitate or hinder the ability of the state and local emergency management departments to communicate, coordinate, handle public information responsibilities, or request and send resources.

Scale

The scale of the disaster is one of the reasons the use of NIMS by the locality was not problematic at the state level. While those interviewed at the state EOC were quick to clarify that the City X tornado was a large-scale disaster for City X, they also pointed out that the tornado was relatively small-scale for the state. According to interviewees, the scale of this disaster was one reason the use of NIMS was not as important. If there had been multiple requests, if there had been many public information requests, if multiple jurisdictions had suffered large amounts of damage, or if multiple state departments or federal departments had been involved, then management of the incident might have been more dramatically affected. According to interviewees, the scale of this disaster did not require that the state and locality walk in lock step.

Local Capability

The state view was that City X was more capable of dealing with the disaster situation than many jurisdictions might have been. City X's resources; previous trainings, drills and exercises; a thorough planning process; its Urban Area Security Initiative (UASI) designation; long-standing mutual aid agreements; and strong regional planning were all cited by interviewees as components of the city's emergency management capability. City X's staff and its seasoned emergency manager were also associated with its capability, according to interviewees, the strong. Leadership and teamwork in City X were often cited reasons for the successful response. "It is more the people and their ability to adjust to changing situations, training, and team work. All those things that seem trite, but that is what keeps it going," said one interviewee. The NIMS mandate was not a characteristic discussed regarding City X's capability.

The intent behind NIMS is to facilitate these very capabilities and ensure they are standard across the country (Department of Homeland Security 2004, 33). Yet, in this case, interviewees argued City X had been capable before NIMS. While some of the elements that the state interviewees mentioned mirror those in NIMS, there was no indication by interviewees that NIMS fostered those elements.

Local View: Hindsight

The old saw "hindsight is 20/20" appropriately describe interviewees' sense of why the system was not more completely used. Only in hindsight did interviewees see how useful NIMS components could have been if they were used early in the response. Unfortunately, as one interviewee stated, "you don't know the benefits of what you do until you have a disaster…so it's truly the proverbial Catch 22…I can't do this without actually having a real event where property and people are hurt." Another said, "The NIMS training was actually really good, but I thought it didn't really pertain to me…that it was all first responder stuff, but I didn't see the connection until I was here." Despite the tendency of interviewees to look back and see how useful NIMS could have been in the response phase, factors such as type and scale of disaster, time between training and event, and consistency and continuity prevented the system from being fully implemented.

Type and Scale of Disaster

Analysis showed that the combination of type of disaster (tornado) and impact (severe) made it difficult for the jurisdiction to utilize NIMS. While the tornado was geographically limited, it devastated City X. Tornado warnings occur with some regularity in the City X area, but the vast majority do not escalate. Interviewees at the local EOC felt tornadoes elicit an inherently different response from floods and hurricanes. One made the following observation:

> We are used to working floods and hurricanes. They are different. We know when flooding is going to happen for the most part and it allows us to be organized. In this case, everyone was flying.

The sudden onset of tornadoes critically limited the local jurisdiction's ability to respond in a highly structured, process-oriented, and organized manner, according to interviewees. Hence the majority of interviewees believed it was the nature of tornadoes that made implementing NIMS difficult. One interviewee described the first day and a half activity as doing "whatever needed to be done." When asked what role NIMS played in the response, one interviewee responded, "Good question, and the reason I say that is a good question is because, in the context of NIMS, I don't consider NIMS when I am doing this."

Fears of trapped victims were the biggest initial motivators and using NIMS to organize, plan ahead, and manage resources wasn't a consideration.

"They are not going to sit and contemplate NIMS compliance when there is life safety issues, friends and family unaccounted for, and the initial impact has to be handled and dealt with," one interviewee said. Another stated, "you'd see a lot of cities having the same sorts of issues…a lot of things are dependent on each other or situations."

Getting and maintaining situational awareness, evaluating and prioritizing issues, comprehensively managing information and resources, and planning are functions that require time, resources, and skill. Because of the sudden onset of the tornado, responders—whether at the EOC or at the ICP—had only limited time and resources to engage in this process. Interviewees felt that taking the time to deal with the disaster in a more organized or comprehensive way during the response phase would have been beneficial ultimately, but that other more pressing tasks would not have been completed in a timely manner. As one interviewee put it, "NIMS is first and last. It is first because if you don't have it in place it makes things in the middle hard to happen. But, it is also last because there are many more important things to do than NIMS."

Time from Training to Event

The jurisdiction was in compliance with NIMS, according to its emergency services coordinator. "Those who should have NIMS training have had it," the coordinator said. Yet one interviewee who had taken NIMS 700, ICS 100, ICS 200, ICS 300, and ICS 400 stated:

> I think most of the people hadn't had the NIMS… I think it hurt because it could have been done. They could have done more. Some were new and just hadn't had a chance to get in there and do it...

And, while many interviewees confirmed that they had indeed gone through NIMS and ICS courses, they indicated the time between the training and the event was too long to for them to use it effectively. One respondent noted that it was difficult to remember what needed to be done and how it

needed to be done to comply with NIMS since it had been six months since they had gone through NIMS training.

More than one interviewee pointed out that the trainings presented a lot of information at one time and that there was considerable time between the few trainings they had. Interviewees also stated that they didn't have enough opportunity to use NIMS before the disaster. Interviewees offered a range of additional explanations for the lack of NIMS's implementation including that some were resistant to implementing the system, confusion related to the system, and that the introduction of new initiatives sometimes made it difficult to keep up with NIMS compliance.

The local jurisdiction was not anti-NIMS—quite the contrary, in fact. Several members of city staff regretted that they didn't have the opportunity to take enough NIMS training that they could understand what was going on around them. "We need more training, not check-the-box training," one said.

The general sentiment from those who had not had NIMS courses was that they wanted to be trained. "I knew that I had to get the NIMS trainings. So I kind of knew what they would be doing and how they would be doing it," one person said. While the majority were supportive of NIMS, the system is not being implemented in a standardized fashion by everyone in the jurisdiction. "Some have embraced NIMS and ICS but there is still significant room for interpretation," one interviewee said.

Consistency and Continuity

The lack of consistency and continuity in the knowledge of and use of NIMS prevented NIMS from being more useful in City X's response and short-term recovery. In this section, the focus is on a lack of consistency in NIMS knowledge and use across response and recovery organizations. The lack of organizational continuity related to knowledge of and use of NIMS is also a theme.

NIMS would perhaps been more useful if all organizations, agencies, and departments involved in response consistently embraced and implemented the system. Take the following example: One person working in the EOC had never attended any NIMS training and had not been part of the city's planning process even though that person's position is important. This person knew they should be playing a role in the community response and recovery efforts, but did not know who to contact to get involved or where to go to help. They had never been to the EOC. They weren't aware there was an emergency operations plan (EOP) or what role their position played.

"The fire and police—this is what they do," the person said. "It is familiar to them, but what about the rest of us? Everyone should be NIMS trained."

Meanwhile, an employee of another department working in the EOC regularly consulted a checklist of EOC duties for their emergency support function, filled out an ICS 214 form to turn into administration, and filled out an IAP for distribution across the organization. This contrast has significant implications for how useful NIMS could have been.

"Typically there is one person who lives and breathes [NIMS] every day in the locality, but nobody else really does and certainly not the nontraditional organizations," one person interviewed said. On the one hand, as the emergency services coordinator stated, "the world won't stop if they don't have NIMS training." He recognized that not everyone is going to understand the ins and outs of NIMS felt they didn't need to as long as they understood the general framework. An example he provided was that the city manager had not had a great deal of NIMS training, but recognized what to do within the framework.

From what the research team observed and interviewees reported, the department, agency, and organization heads at the EOC in the immediate wake of the disaster had NIMS training. Although NIMS was not implemented in the way it was designed, those present could have been expected to be familiar with the concepts and structures. After the "first shift" was relieved and following shifts cycled in, the new representatives, for the most part, did not have background in NIMS. Without continuity in the use of NIMS, the system was difficult to fully use in this disaster.

One could expect, based on the interview data, that NIMS training will be sought out by some of those who didn't have it and that the system will be more fully integrated in the City X response network in the next disaster. As an interviewee put it, "... one of the key aspects of all this is not just the after action report but it's an understanding that this is an iterative process…"

Discussion

The findings from this research do not indicate whether NIMS works or if it useful as a national emergency management system. Rather, the findings show how interviewees at the state and local

level perceived use of the system, how NIMS uses was evidenced by content analysis and participant observation, and factors interviewees found useful in one disaster situation.

At the start of this research, it was presumed that the local context in which this disaster occurred would be conducive to NIMS implementation. The findings demonstrated that the local jurisdiction was not able to use NIMS fully despite favorable conditions. Rather than proving this disaster a poor choice for a case study, the findings show that there remains a significant struggle with NIMS implementation, even where one could expect NIMS to befully implemented.

City X may ultimately get to the point where a system like NIMS is implemented in a disaster, but it is not going simply to be because it was mandated. Changes in how the jurisdiction manages disasters are more likely to be brought about through a combination of trial and error, examining what did and did not work in disaster response, and trying to improve future response. If the individuals, departments, agencies, and organizations participating in the response had intimate knowledge of NIMS, it would have helped implement the system. Yet, in the absence of the systems' full implementation, the jurisdiction, by all accounts, mounted a response effort that displayed many of the hallmarks of an effective response as noted in the disaster literature (Drabek 2005; Fischer 1998; Wenger, Quarantelli, and Dynes 1986).

This research suggests several key findings. First, type, scale, and complexity are important considerations in the use of NIMS. City X experienced a severe tornado that did not necessitate a complex response. These disaster characteristics were important in how interviewees perceived NIMS' use and usefulness in this particular situation. While it's an attractive notion that a single emergency management system could be suitable for all disaster types, scales, and complexities, more research must be conducted before this type of claim can be credibly made.

Second, the role of the IMT holds interesting possibilities beyond this disaster. The IMT was able to support the local efforts and bring NIMS, including elements of ICS, into the EOC during the short-term recovery. Future research could investigate the potential of leveraging IMTs in other states and disaster situations as a way to "make NIMS work" for other jurisdictions, particularly smaller jurisdictions that lack resources.

Finally, NIMS is commonly thought of as a response system, yet the findings show that NIMS was useful—to the degree that is was used—in the short-term recovery period. Future research on NIMS implementation during disasters could examine whether NIMS use and usefulness changes as the response transitions to short-term and/or long-term recovery.

The findings from this research can be viewed as sensitizing concepts for future study of NIMS implementation, or a similar emergency management system. These sensitizing concepts could be used in a disaster situation to study the relationships between NIMS use and usefulness and variation in the following independent variables:

- Status of emergency management in jurisdiction
- NIMS training
- Knowledge of what NIMS is
- Capability
- State of preparedness
  - Resources
  - Drills, exercises
  - Plan and planning process
  - Mutual aid agreements
- Disaster characteristics
  - Type (including forewarning and duration)
  - Scale
  - Complexity
- Disaster phase
- Support provided to jurisdiction being studied (i.e., IMTs)
- ICS versus "greater NIMS"
- Consistency and continuity of application in a disaster situation
- EOCs
- State versus local levels
- Perceived success of response

There are a few points to make regarding the methodology and limitations of this study. The research team was not formally introduced in either the state or local EOC. Although the lack of formal introduction did not prevent the research team from conducting interviews, it might have had impacted the research in two ways. The first is that people in the EOC might have altered their behavior would because of the research team's presence. The second possible impact is that the team might have been able to conduct more interviews if they had been introduced.

Participant observation should have allowed the research team to observe the many facets of NIMS implementation and supplement observations

with informal interviews. Although the researchers observed both NIMS implementation and opportunities for better NIMS utilization in this study, the team would have had to be in the City X EOC or ICP in the first few hours of the tornado strike to observe NIMS in the initial response phase to the disaster. Given the circumstances, the researchers could not have arrived in State X any sooner; therefore, they relied on data from interviews and content analysis more than originally intended. Finally, a limitation of this study is that the research was conducted on only one disaster situation. The findings from this report make it all the more important that research is continued in this area.

Conclusion

Beyond this one report, NIMS implentation remains a critical issue for the discipline of emergency management. As Tierney, Lindell, and Perry (2001) and Neal and Webb (2006) pointed out, instituting a management system in the absence of any research or testing was misguided. This research endeavor has contributed to the empirical research available on the subject, but it falls to future researchers to build the body of knowledge related to this topic. This study of NIMS use and utility enables academics, practitioners, and policy makers to each, in their own way, reflect on NIMS as an emergency management system, its potential for use in disasters, and the factors that might limit or promote its usefulness.

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