Are We Prepared Yet?

The ongoing quest to assess and measure preparedness

This article is based on a research project conducted as part of the Emergency Management Executive Academy at the Federal Emergency Management Agency's (FEMA) Emergency Management Institute. The project team for this effort included emergency management professionals from federal, state, local and non-government agencies.

Abstract: Congress and others have routinely asked if the nation is prepared for disasters given the investments made since 9/11. The short and unfortunate answer is no. While the nation is certainly much better off, there is simply no amount of money that can ensure all organizations, communities, and individuals are truly prepared for the dynamic list of threats and hazards that exist. Preparedness is an ongoing process with many factors that need to be examined and there is currently no one single system to truly understand preparedness. This article examines efforts to assess and measure preparedness with the goal of identifying some good practices, ideas, and recommendations for the FEMA and others to consider.

Introduction

Billions of dollars and an enormous amount of effort have been directed at enhancing national preparedness efforts as it relates to human-caused and natural disasters, yet many jurisdictions and organizations still struggle to determine how prepared they are and how prepared they need to be. Despite the advent of the national preparedness system and associated assessment efforts, the emergency management community is still challenged to measure and articulate local, state, and national preparedness.

Purpose and Scope

As part of FEMA's Emergency Management Executive Academy, a project team examined the ongoing quest to assess and measure preparedness with the goal of identifying some good practices, ideas, and recommendations for FEMA and other whole community stakeholders to consider, including public, private sector, and non-profit organizations.

One of the biggest challenges to measuring preparedness stems from the fact that preparedness means different things to different people. Additionally, how communities and organizations prepare greatly depends on what they are preparing for. For example, although there are some commonalties, preparing for an active shooter situation is different than preparing for a flood.

For the purposes of this research, the focus is on the collective efforts of government and other organizations to prepare for human-caused and natural disasters and FEMA's definition of preparedness, which is the "continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response." However, the research did not delve into the issue of individual preparedness, although that is certainly an important topic to study and something that factors into the larger understanding of community preparedness.

Research Methodology

The research methodology was multi-faceted and involved several methods to gather and analyze information, including:

- A **literature review** on the topic of assessing and measuring preparedness, examining over 30 resources from a broad array of government, academia, and other entities.

- An examination of several **tools and methodologies** used to assess and measure preparedness, to include the current Threats Hazard Identification Risk Assessment (THIRA) process.

- The development and use of a **survey** to capture data and information from emergency management stakeholders from across the country; 131 respondents from 30 states completed the survey.

- **Interviews** with subject matter experts (SMEs) and stakeholders; in total 28 individuals were interviewed, including SMEs in the top five high-risk states based on federal disaster declarations.

- A **focus group** discussion with members of the EMI Executive Academy cohort in an effort to get their perspective and feedback on the findings.

Findings and Good Practices

The research revealed a number of findings and some good practices related to assessing and measuring preparedness.

Findings

No Universal Definition of Preparedness

As noted above, one of the biggest challenges stems from the different interpretations and definitions that can be applied to preparedness. Of all the emergency management phases (prevention/mitigation, preparedness, response, recovery), preparedness may be the most broadly defined. As such, it might not be possible (or even desirable) to reach consensus on a universal definition, but when discussing the issue of assessing preparedness it is critical to provide context, because absent this context, people will make assumptions that may not be applicable.

Progress Has Been Made

Assessing and measuring preparedness are not new ideas and over the years FEMA and others have made progress. For example, FEMA's capability-based model that started with Homeland Security Presidential Directive (HSPD) 8 and has continued with Presidential Policy Directive (PPD) 8 provides a common framework, to include a series of capabilities that can be assessed and measured over time. Although some of the tools and methodologies have changed, the overarching frameworks and capability-based approach have endured, and this has been helpful to ensure some degree of consistency in thinking and approach.

The creation of standards such as National Fire Protection Association (NFPA) 1600 and Emergency Management Accreditation Program (EMAP) standards have also proven to be helpful benchmarks for agencies to measure themselves against. Technology is aiding the effort as well, as the American Red Cross and others have developed intuitive web-based tools to help organizations assess their preparedness levels. Websites like the National Health Security Preparedness Index are also helping to promote the importance of preparedness assessments and the need to track progress over time.

In addition to the NFPA 1600, which has become a common framework used to guide private sector preparedness efforts, the creation of a voluntary Private Sector Preparedness Accreditation and Certification Program, also known as the PS-Prep, has been an important advancement as well. Formally initiated in 2007 as part of the Implementing Recommendations of the 9/11 Commission Act, PS-Prep has evolved into an overarching effort that recognizes NFPA 1600 and other mechanisms to certify compliance with a baseline level of readiness for private sector organizations. Although more narrowly focused, the cybersecurity framework created by the National Institute for Standards and Technology is another good example of a mechanism that can be used to assess preparedness levels (related to cyber security) and has become an industry standard for both public and private sector organizations.

In some ways, the private sector may be better positioned to assess their preparedness levels, as many industries within the private sector must meet specific regulations (e.g., Occupational Health and Safety) or reliability standards that require robust preparedness programs to be in place. Internal and external compliance audits, after action reports, and compliance reporting were identified as mechanisms to assess preparedness based on interviews with emergency management professionals within the communications, electric, and financial sectors. Although federal regulations can sometimes be considered as overly burdensome, the advent of regulations and reliability standards can also be viewed as a positive in terms of advancing preparedness and creating benchmarks for the private sector.

Room For Improvement

Despite the progress, there is still a great deal of room for improvement, especially when it comes to the use of the THIRA and associated State Preparedness Report (SPR) process to assess local, state, and national preparedness. Based on the research, many stakeholders feel that the Core Capabilities are too abstract and/or not particularly relevant, especially at the state and local level. This is problematic given that the capabilities are the basis of the THIRA/SPR assessment effort. The THIRA process is also complex and challenging. For example, the majority of those surveyed (61%) believe that the THIRA process is not intuitive or user friendly. Although a slight majority of the survey respondents (54%) felt that the process produced some useful or actionable information and was done in a collaborative fashion (61%), most of those interviewed felt very differently and many questioned the current approach of each jurisdiction setting and assessing different capability targets (as opposed to the entire capability). Although the assessments are done differently across the country, FEMA "rolls up" the various data points to help produce the National Preparedness Report (NPR) which can lead to some potentially misleading data and conclusions. This was an often cited concern among those interviewed and surveyed, especially given the emphasis FEMA is placing on THIRA and the NPR.

The SPR process was viewed slightly more favorably than the THIRA as it relates to its intuitiveness (56%) and usefulness (59%) but slightly less in terms of collaboration (57%), with many of those interviewed noting that they do not have an opportunity to participate in the process as the SPR is completed by the states and not every jurisdiction participates. Many stakeholders also felt the SPR assessment process is too subjective, a criticism echoed by the Government Accountability Office (GAO). However, the SPR's use of the planning, organization, equipment, training, and exercises (POETE) framework to examine the capabilities was thought to be intuitive and was generally well received based on the research. In terms of who most benefits from the THIRA/SPR process, the majority of survey respondents felt that the federal government was the primary beneficiary of the process (60% for the THIRA and 54% for the SPR), and many of those surveyed and interviewed felt that the benefits were minimal to state and local stakeholders. Several people noted that the entire process is a "check the box" exercise in order to receive federal homeland security grant funding, as completion of the THIRA/SPR is a federal grant requirement.

The survey revealed that other methods and tools are being used to assess preparedness as well. Common approaches included the use of After Action Reports from exercises and real-word events, surveys, engaging subject matter experts, risk assessments, use of strategic plans, and the development of performance indicators. The use of standards such as EMAP is another often cited mechanism to assess preparedness. Despite the various approaches, however, very few of those surveyed or interviewed had a comprehensive program in place to analyze the various data and information sources.

Never Done

It is important to recognize that the nation will never be done preparing for natural and human-caused disasters. When it comes to preparedness, it is also important to ensure the various preparedness efforts (including assessments) are grounded in risk. The various threats and hazards are simply too dynamic and it is impossible to prepare for everything equally. People, processes, and technology are constantly changing as well. Much like educating children or taking care of the environment, preparing for disasters is an enduring mission that will require ongoing and focused commitment. It will also require some degree of ongoing financial support from the federal government to state and local governments for homeland security/emergency management purposes, particularly if there is a desire to be able to develop, sustain, and deploy specialized response capabilities (e.g., Incident Management Teams). However, there is no amount of money that will guarantee preparedness, so risk informed investments are important as is accountability for how the funds are used. More effort is also needed to educate elected leaders and oversight agencies so that they better understand the ongoing nature of preparedness and appreciate that the nation will never be "done" preparing.

No Silver Bullet

Another complicating factor is the fact that disaster preparedness, particularly at the jurisdictional level, requires input and coordination from so many different stakeholders. This challenge is particularly vexing at the national level due to the sheer volume of agencies and organizations involved. As such, it is unlikely that any one system will adequately measure national preparedness. However, the use of common tools and frameworks can certainly help the various stakeholders examine preparedness in a more consistent way. The issue of subjectivity is also a recurring theme in the research, but when it comes to assessing a somewhat abstract concept like preparedness, there is a need to embrace some degree of subjectivity as long as the right people (i.e., subject matter experts) are being subjective and they are using standardized processes and approaches that can be replicated and justified.

Like intelligence analysis, preparedness includes many factors that need to be examined to develop a full understanding of the issues. In addition to the THIRA/SPR, interviews with subject matter experts, surveys, and the analysis of exercises and real world events need to be considered as well. Beyond some of the more traditional resources, when assessing a jurisdiction of some type, an even broader examination of social, community, and economic factors should be considered through a more comprehensive assessment of all the available data.

Precision is Unlikely (and Dangerous)

Preparedness is most easily assessed in retrospect. After something bad happens, it is much easier to examine why things worked or did not work and what could have been done differently. Assessing preparedness before an event is just that, an assessment, and because there are so many factors that can influence how an agency or jurisdiction will respond during a crisis, it is nearly impossible to predict preparedness with any degree of certainty. It is also dangerous to assume precision is possible when measuring preparedness, as it can lead to a false sense of security. Being able to say that a jurisdiction is 96% prepared may sound nice, but because of the myriad of variables at play, that number will almost certainly be misleading. From an agency or organizational perspective, through the use of standards like EMAP, it may be a little easier to express confidence in some level of assessment, but even then there will inevitably be variables outside of one's control that will prevent certainty and limit the ability to guarantee success when it comes to responding to a crisis.

As the economist John Maynard Keynes noted, "It is better to be roughly right than precisely wrong," and this adage holds true when it comes to assessing preparedness. The quest for precision can take one down a misleading path (or lead to a dead end), so when it comes to developing systems and approaches to assess and measure preparedness, there should be more focus on developing sound processes and methodologies and less on precision.

Leadership and Collaboration are Critical

Leadership and collaboration are two of the most important (and hardest to measure) factors to consider when examining preparedness. An agency or jurisdiction can be highly capable and well-resourced and still fail during a crisis due to poor leadership and decision making, and/or because they lack critical partnerships, and the bigger the disaster, the more critical leadership and collaboration become. In addition to leadership, it is also important to examine the strength of community and social networks as they play a key role in community resilience. As such, preparedness assessments should include some examination of measures aimed at understanding leadership and networks/collaboration, even if qualitatively, as in the case of the commander's assessment, a subjective analysis used as part of some of the military models examined.

Assessments should also involve key leaders and partners as they can serve as valuable learning and networking opportunities. The National Emergency Management Executive Academy offered at FEMA's Emergency Management Institute (EMI) and other executive education programs such as those offered through Harvard's Kennedy School of Government, and the Center for Homeland Defense and Security (CHDS) are critical as well, as they expose leaders to important concepts (e.g., meta-leadership) and can help to build or strengthen professional networks. Professional certifications like those offered through the International Association of Emergency Managers can also help to further credential emergency management leaders.

The response to the Boston Bombing provides a good case study in the importance of leadership and collaboration and how preparedness pays off. The first responders and other partners involved in the response had strong relationships prior to the event and regularly planned, trained, and exercised together, which greatly aided the response efforts and likely mitigated the loss of life. Additionally, the elected leaders worked well together, communicated effectively, and avoided many of the political pitfalls that can occur during large-scale events involving multiple jurisdictions. On the other hand, the response to Hurricane Katrina demonstrated what happens when effective leadership and collaboration are not present.

Measure What Matters

The emergency management community has struggled to come up with metrics to measure preparedness. Most of the metrics focus on outputs of some kind but very few on outcomes. Unlike other public safety issues such as crime, disasters are often at the mercy of forces beyond control (i.e., Mother Nature). Despite this fact, the GAO and others have pressed hard on the need to develop meaningful outcome measures and associated metrics. From a capability perspective, the various POETE elements can be measured in some capacity, which is the approach used as part of the SPR process and with New York's County Emergency Preparedness Assessment (CEPA) program mentioned below. Additionally, FEMA is working to develop a series of objective measures for the Core Capabilities, and some jurisdictions, including the Bay Area Urban Area Security Initiative (UASI) partners, have made a lot of progress in developing their own measures for the Core Capabilities.

The desire for metrics will likely not go away, so it is important that FEMA and others continue to work on developing them. However, it is also important to avoid trying to measure everything and focus on measuring what matters. When it comes to metrics, less is sometimes more, as it is better to have a few meaningful metrics than spending valuable time trying to measure everything. Additionally, simple yes/no types of metrics should not be discounted, as they may be relevant to a broader audience. For example, every jurisdiction should be able to report if they have an emergency response plan (output), and after a disaster they should be able to determine if the plan helped to achieve the desired result (outcome). That is not to say that the process of developing metrics is or will be easy, but it is important to keep things simple and intuitive whenever possible.

Process Matters Too

In a perfect world, there would be a comprehensive preparedness standard (and associated metrics) that every jurisdiction could adopt and be measured against. There would also be a process in place to audit jurisdictions to ensure compliance. Unfortunately, the world is not perfect. Disaster preparedness is a complicated mission filled with a wide variety of diverse communities and stakeholders that must work together to prepare for and respond to a dynamic list of threats and hazards. By design, the federalist approach to emergency management is based on parity amongst the various layers of government, and many of the key partners (e.g., non-profits, private sector, and citizens) operate beyond the direct command and control of the government. As such, a more nuanced and diplomatic approach to influencing desired behaviors and outcomes is required.

Although standards and audits may work at the organizational level, they are likely going to be less effective at the jurisdictional level, but that does not mean jurisdictions should be immune to oversight and not held accountable. Tying the completion of THIRA to the receipt of federal grant funds has certainly helped to ensure jurisdictions are completing the process, but in many cases the process is more about checking a box to maintain grant eligibility than it is about understanding risk and capability levels. FEMA needs to be more engaged in the process and focus less on ensuring the boxes are checked. They also need to understand that the approach used to assess and measure preparedness is probably more valuable than any sort of report that may come from the process. Getting key partners together on a regular basis to think about their level of risk and capability is invaluable and can help to create a collective understanding and strengthen key relationships. To ensure they keep coming back, the process must be intuitive and beneficial to those involved.

Good Practices

The **New York State Division of Homeland Security and Emergency Services (DHSES)** developed a County Emergency Preparedness Assessment (CEPA) Program that includes workshops in each County (and New York City) to assess local risk and capabilities using a POETE based model. The workshops involve a standardized, intuitive, and collaborative approach to capture and validate data and information based on a methodology that was developed by DHSES in collaboration with local public safety professionals. DHSES also worked with local public safety partners to develop a more intuitive and practical list of capabilities to be assessed as part of the CEPA. The CEPA helps identify capability gaps and trends so that state and local emergency management agencies can allocate their resources and effort more effectively. It also serves as a process to help measure preparedness in New York State as the CEPA workshops are conducted every three years. The information obtained from CEPA supports the completion of the THIRA, but by using the facilitated workshop approach and CEPA process, instead of simply relying on the THIRA methodology, the data is captured in a more consistent and accurate fashion.

The **Florida Division of Emergency Management** has several innovative initiatives, including a program to assist counties with obtaining EMAP accreditation. The program includes technical assistance for counties seeking the accreditation and financial incentives once the accreditation has been achieved. Florida also completes local capability assessments as part of their planning process, and they have developed a tool and an associated workshop to further examine local logistics capabilities. They recently completed a statewide risk and capability assessment as well with the help of a contractor.

The **Bay Area UASI** partners worked with a consultant and their local stakeholders to develop a series of preparedness related performance measures and associated tools to capture information from the jurisdictions that make up the UASI region. The measures all align to the Core Capabilities and help to inform the THIRA process. They also use a web-based software system to house and analyze the data.

The **National Preparedness Leadership Initiative (NPLI)** at Harvard's Kennedy School of Government is an example of an innovative effort to educate leaders and to better understand executive decisions and attributes that can contribute to improved levels of preparedness. As noted above, leadership and collaboration are critical yet often overlooked components of preparedness. NPLI's research and ability to observe leaders during crisis situations has helped to create tools to prepare future leaders. For example, the NPLI meta-leadership framework is a means to analyze and guide leadership activities during a crisis, including the ability to improve self-awareness, better understand the situation, and engage in multi-directional leadership both within and beyond one's organization. This meta-leadership framework can also serve as a preparedness tool and something that can be examined before and after an event. In addition to the NPLI, as noted above, the **EMI Executive Academy** and the leadership programs offered at the **Center for Homeland Defense and Security** are worth highlighting as well, as they expose leaders to important concepts that can improve their understanding of preparedness.

FEMA's National Preparedness Assessment Division (NPAD) has recently created an Evaluations and Decision Support Unit that is actively looking to identify and leverage various data and information sources to better understand preparedness. They recently hired a series of Lesson Learned Advisors (LLAs) that are deployed to capture data and information during response and recovery operations across the country. When deployed, the LLAs work with the Federal Coordinating Officers (FCO) and Federal Disaster Recovery Coordinators (FDRC) on a "collection plan" to determine what issues need attention and who to speak with. They capture and quantify information about what is and is not working so that issues can be addressed either during the event or afterwards, depending on the nature and complexity of the issues at hand. The LLAs upload their findings into a web-based system and are able to "tag" their observations by disaster, capability, and POETE area so that they can be sorted and themes can be identified. This approach allows for a more real-time assessment of response and recovery operations and the data can be leveraged as part of larger preparedness assessments as well. These LLAs can also support FEMA Regional and HQ levels of collection regarding incident support activities in addition to field-level incident management activities. FEMA also plans to use the LLAs for steady-state evaluations (not just response/recovery) and eventually aims to support the whole community by promoting continuous improvement in emergency management as a discipline.

The **American Red Cross** has created the Ready Rating Program to help organizations assess their readiness and understand what steps they can take to improve preparedness. The program was created in partnership with the private sector and includes the use of a simple web-based tool designed to assess preparedness based on a series of questions. It includes two levels of assessment, basic (25 questions) and advanced (60 questions), and those that complete the assessment can also sign up for a quarterly newsletter with preparedness tips and other information. To date, more than 13,000 organizations have signed up for the program, which is offered free of charge by the American Red Cross. Ready Rating is an excellent example of the use of technology to help assess preparedness, and it is a great tool for small businesses, non-profits, and other organizations that may not have a lot of resources available for preparedness assessments.

Of the other countries examined, **New Zealand** appears to have the most robust system in place to assess and measure preparedness. Like New York's CEPA program, New Zealand's National Capability Assessment is highly collaborative and captures data through a series of regional workshops. They have also created a series of performance indicators and have developed a process to validate the data, thereby limiting the potential for subjectivity and skewed results. Unlike the THIRA process, New Zealand's approach is intuitive and includes a high-degree of local engagement by the country's emergency management agency, as the Ministry of CDEM's Regional staff helps to facilitate the regional workshops.

Recommendations

The research has resulted in several recommendations that FEMA (and perhaps others) may want to consider related to assessing and measuring preparedness.

Promote POETE: Although a universally accepted definition of preparedness is unlikely, when it comes to assessing disaster preparedness, a common definition and analytical framework is needed. FEMA's definition of preparedness and the associated POETE methodology actually provides a pretty good base from which to work in terms of assessing capabilities, but the definition and approach are not widely understood by the various stakeholders. FEMA should focus more on promoting its definition of preparedness and the associated POETE methodology. The POETE construct is intuitive and can likely be used by other public and private sector organizations as well.

Work to Streamline and Improve the THIRA/SPR Process: Based on the research, most everyone agrees that we need a system in place to examine local, state, and national preparedness. The THIRA/SPR process is currently the crux of that system, but it is overly complicated and flawed in many ways. FEMA should work with state and local stakeholders to improve the THIRA/SPR process by making it more intuitive and user-friendly. For example, as noted above, the POETE construct makes sense and provides a good framework to assess the various capabilities, but rather than examining the entire capability, the current THIRA process looks at individual targets that are set differently by different jurisdictions across the country. FEMA should streamline the process by simply examining POETE in a standardized way. New York State is using this type of approach and could provide FEMA with some insight.

Trust but Verify: FEMA has routinely been criticized for relying on self-assessment data, but when it comes to assessing a somewhat abstract concept like preparedness, there is a need to embrace some degree of subjectivity as long as the right people (i.e., subject matter experts) are being subjective and they are using standardized processes and approaches that can be replicated and verified. FEMA should trust the state and local data but develop mechanisms to verify the process used to capture the data and consider becoming a more active participant in the process, rather than simply ensuring the appropriate boxes are checked. For example, FEMA should consider facilitating workshops to capture the information in a more consistent and collaborative fashion. Both New York State and New Zealand are having success with the use of facilitated workshops to capture preparedness information and could serve as models to consider.

Invest in Preparedness Analysts: Much like intelligence analysis, assessing and measuring preparedness is as much art as it is science. However, there are numerous data and information sources available that can be analyzed to help assess and understand preparedness. The key to this process is people trained to know what to look for and how to make sense of the information. FEMA, states, and others should consider the use of Preparedness Analysts to help analyze and assess preparedness. Like Intelligence Analysts, Preparedness Analysts will also need to be trained and mentored to ensure they have viable skills and a career path.

Participate in Executive Education Initiatives: Given the importance of leadership and collaboration as it relates to preparedness, public, private sector, and non-profit organizations should make a concerted effort to educate their leaders through programs like those offered at EMI, CHDS and Harvard. These programs expose leaders to higher-level concepts that can help improve the way leaders think about preparedness and make decisions.

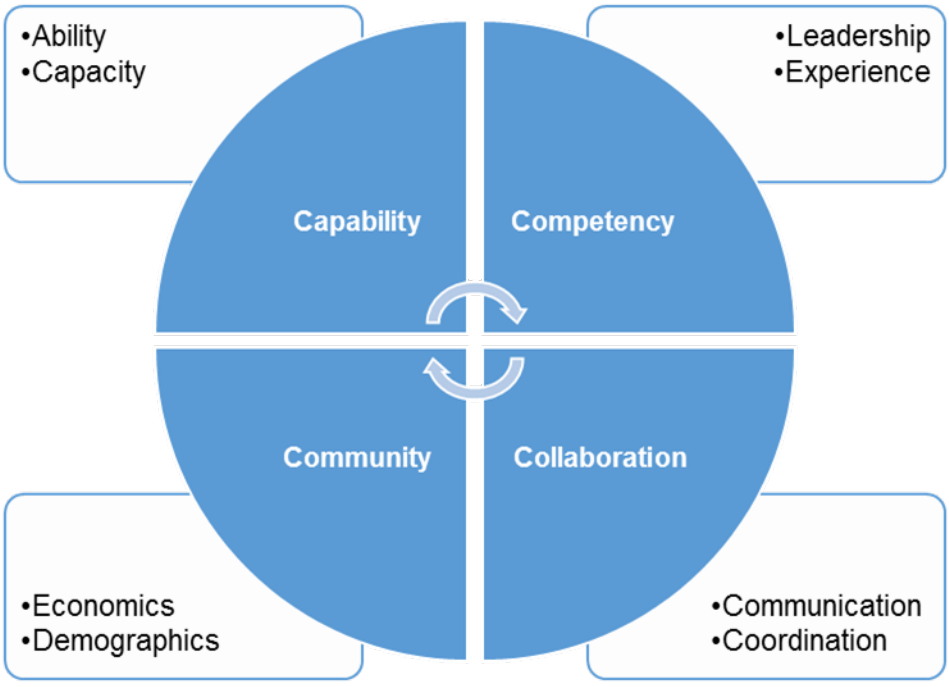
Create an Incident Command System (ICS) Improvement Officer Position: FEMA should consider the establishment of an Improvement Officer position and function within the Incident Command System (ICS) Command Staff structure. This position would be responsible for helping to identify what is and is not working as it relates to the incident response and recovery efforts. FEMA is working to implement a similar concept through the use of Lessons Learned Advisors that are deployed to help address some of the functions outlined above. However, as FEMA employees, these individuals are generally focusing on FEMA issues and not the entirety of the incident, and there is currently no formal ICS role or doctrine for this function. Creation of the Improvement Officer position would formalize the function and help to integrate it into the larger ICS system at all levels of government. Establishing the Improvement Officer function would also help with the challenge of trying to assess and measure preparedness, as it would enable the emergency management community to better capture and utilize real-time and post-event data sources to understand preparedness, in addition to the numerous pre-event assessments and data examined currently. Even if the Improvement Officer Position is not formally established as part of NIMS, jurisdictions may want to consider the use of such a position during their incidents and exercises.

Establish a Community of Practice: Many organizations and jurisdictions are actively assessing and measuring preparedness. FEMA should engage these stakeholders by creating a preparedness assessment work group or community of practice. Although some effort is made to capture feedback on the THIRA/SPR process, a more formal and ongoing process is needed to regularly engage key stakeholders on preparedness assessment related issues, to include the development of preparedness measures and metrics. New York State, Florida, the Bay Area UASI, and others likely have valuable insight to share, and a community of practice could help FEMA "crowd source" some ideas and solutions.

Consider a Deliverables Based Grant Model: Although this research purposely did not focus on how to assess the impact of the homeland security grant programs (another enduring challenge), it is hard not to say something about the grant programs given that their stated purpose is to help improve preparedness. The grant guidance is currently very broad and the funds can be used to support a wide variety of activities, which is a good thing, but FEMA may also want to consider requiring some specific deliverables as well. For example, the NPR noted that most states are struggling with cyber security, so perhaps FEMA should require states develop some type of cyber security plan or framework. FEMA currently places other strings on the funding (e.g., completion of THIRA/SPR), so requiring some deliverables would not be unreasonable, and it could serve as another mechanism to help measure preparedness and the impact of the grant funding.

Explore New Assessment Frameworks: Given the vast array of variables, data, and information sources, preparedness can be examined from multiple perspectives. These perspectives may include community, economic, social and individual preparedness factors. FEMA has made some progress in this regard with the NPR as it does leverage a variety of data inputs, but an even broader perspective is required to truly examine preparedness in a more holistic way, to include the external factors and changing social dynamics that may limit preparedness. Additionally, there has to be a better way to examine leadership and collaboration as part of preparedness assessment efforts, as these factors are just as important as having the necessary capabilities. Much of the focus to date has been on assessing capabilities (ability and capacity), but other components such as competency (leadership and experience), collaboration (communication and coordination), and community (economics and demographics) warrant much further examination, to include the identification of relevant metrics and indicators for the various components. This new "Four C" model is depicted below and could serve as the basis of a broader assessment framework. This framework and the associated components warrant additional research and consideration.

"Four C" Assessment Framework



Note: capability, competency, and collaboration are relevant for all organizations, but community factors should also be included in jurisdictional level assessments.

Conclusion

This is not the first, nor will it be that last, effort to examine how the emergency management community can better assess and measure preparedness. Nobody has the monopoly on good ideas, but the hope is that that these ideas and recommendations can, in some way, help to inspire others to think differently about preparedness and how best to assess and measure it moving forward. At minimum, the goal here is to expand the dialogue and thinking on this important topic.

Ideally, others will take the research even further and delve deeper into the issues identified. There are many topics that warrant further study, including how to measure and assess some of the more abstract (yet critical) preparedness components such as leadership and collaboration. Much of the work to date has been centered on assessing capability, but without sound leadership and effective relationships even the most capable organizations may struggle during a crisis. As such, the "Four C" framework outlined previously warrants much further examination.

The most important takeaway from this project is the idea that preparedness is a never-ending process that warrants a broader and more holistic analytical perspective to be truly understood. No one single system or approach will suffice and it is time to begin thinking differently about how to assess and measure preparedness. Progress has been made, but more can and should be done to address this enduring challenge facing the emergency management community.

About the Authors

Terry Hastings is the Senior Policy Advisor for the New York Division of Homeland Security and Emergency Services, where he is responsible for the development and maintenance of New York State's Homeland Security Strategy and other statewide initiatives. He is also an Adjunct Instructor for the College of Emergency Preparedness, Homeland Security and Cybersecurity, at the State University of New York at Albany.

Chris Hennen is the Emergency Manager for the United States Military Academy at West Point, where he oversees their all hazards emergency management program. He has been affiliated with West Point for more than 30 years, and is a retired U.S. Army Military Intelligence officer.

Gerald Manley is the Director of the Headquarters, Department of the Army (HQDA) Directorate of Mission Assurance. He is responsible for the integration of the Headquarters Protection Program (which includes emergency management), the Safety and Occupational Health Program, Communications Security Program, Personnel Security Program, and the global Central United States NATO Registry. He served in the active duty Army for over 25 years, and is also a local Community Emergency Response Team volunteer.

John Penido is the Disaster Management Area Coordinator for Area C of Los Angeles County, California. He coordinates emergency preparedness, response and recovery efforts in 10 cities with a combined population of 721,000 residents. His experience includes positions as a fire chief, paramedic, deputy sheriff and Army officer. He is an instructor for the Emergency Services Training Institute of the Texas A&M Engineering Extension Service and the Paramedic Program at Mt. San Antonio College.

Art Samaras most recently worked for the American Red Cross, where he was responsible for introducing and implementing the concepts of continuous improvement. He has more than 20 years of experience working as a consultant to industry and is currently a medevac flight paramedic.

Joe Sastre is the Emergency Management Director for the Town of Groton, Connecticut. He has 40 years of public safety experience, and currently serves as the Chairman of the CT Division of Emergency Management and Homeland Security (DEMHS) Region 4 Emergency Planning Team Steering Committee.

Kevin Sligh is the Technical Advisor to the Chief, Marine Environmental Response Office at Coast Guard Headquarters where he serves as the principal advisor on a myriad of policy and response issues such as the National Contingency Plan and the Coast Guard's support to FEMA under ESF-10 (Oil & Hazardous Substance response). He has served the military in active duty and reserve capacities for more than 24 years.