RESILIENT AMERICAN COMMUNITIES: PROGRESS IN PRACTICE AND POLICY

Hyatt Regency, Washington, DC | Thursday, December 10, 2009

Center for Biosecurity of UPMC

CONFERENCE SUMMARY REPORT

Resilient American Communities: Progress in Practice and Policy (December 10, 2009, Washington, DC) was organized by the Center for Biosecurity of UPMC in collaboration with the National Consortium for the Study of Terrorism & Responses to Terrorism (START) and the Natural Hazards Center of the University of Colorado at Boulder. The meeting convened more than 140 attendees; among them were U.S. government officials, congressional staff, policy analysts, scholars, public health and emergency management practitioners, and members of the media. Speakers and panelists included representatives of major U.S. government programs and of private and non-profit initiatives. All are working to advance community resilience as a national goal.

The purpose of this meeting was to apply state-of-the-art knowledge of resilience to the design of federal policies that will strengthen local communities and their environments to withstand disasters, epidemics, and terrorism. To that end, there were 2 primary objectives: (1) discuss steps that improve community resilience to extreme events, based upon evidence from the field; and, (2) identify ways in which the U.S. federal government can best support localities and regions in implementing these measures. Such actions include: anticipating hazards in the design of safer hometowns; strengthening partnerships among the government, the private sector and community organizations; engaging citizens in policy decisions about their health and safety; and ensuring adequate protections for vulnerable populations.

This conference summary report was prepared by Center for Biosecurity's staff to provide a synopsis of each day's panel discussions and individual presentations. We invite you to visit the conference website, where you will find videos of the day's discussions, along with the conference agenda, speaker bios, the attendee list, and background readings: www.upmc-biosecurity.org/resilientcommunitiesconf.

Welcome and Opening Remarks

Thomas V. Inglesby, MD, Director, Center for Biosecurity of UPMC

Dr. Inglesby opened the conference with a quote from President Obama, who proclaimed in September 2009 that a goal of his administration was " to ensure a more resilient nation—one in which individuals, communities, and our economy can adapt to changing conditions as well as withstand and rapidly recover from disruption due to emergencies." (*National Preparedness Month Proclamation*, September 4, 2009)

Dr. Inglesby then framed the day's discussion with the following 3 points:

It is critical to build community resilience to extreme events.

Dr. Inglesby distinguished among individual, national, and community resilience. He said that there are actions we need to take to build resilience at the national level—for example, to become resilient to biological threats, the country needs medicines and vaccines to respond to major threats. There are also actions that individuals need to take to improve resilience. But the focus of the meeting today is to consider and propose policies and programs that build resilient communities. In contrast to the ability of individuals or nations to respond to and recover from disasters, Dr. Inglesby defined community resilience as a community's capacity to anticipate, withstand, and rebound from a disaster with minimal damage and disruption by virtue of the strength of its people, institutions, plans, and actions.

It is an important time for discussing national policy on these issues because the idea of resilience is prominent in the Obama administration.

Dr. Inglesby noted that the current administration's interest in and commitment to building resilience has extended to the creation of a resilience directorate. He also pointed out Secretary Napolitano's discussion of the need for public engagement in resilience and that Congress is considering several bills that, if passed, would promote individual, community, and national preparedness. Dr. Inglesby then emphasized the salience of the day's discussion, noting that it synched well with national policy and program cycles.

Building community resilience requires an assessment of current efforts and ways to improve upon them.

Dr. Inglesby posed a number of questions about ways to construct effective policy and a culture of resilience in the U.S.:

- What programs and practices are working to build resilience and how can we replicate and disseminate them?
- We have emphasized individual preparation, but are we doing enough to promote community preparedness?
- Have we struck the right balance between the pursuit of disaster mitigation and response?
- Are there current policies that actually increase risk in some communities?
- How can we engage multiple stakeholders in building resilience?
- How can we take care of the most vulnerable groups in our society?
- What can the administration and the Congress do to help build local and regional resilience?

Summary by Tara Kirk Sell

Building the Team for Resilient Communities

Richard Serino, Deputy Administrator, Federal Emergency Management Agency (FEMA)

As Deputy Administrator of FEMA, Mr. Serino works to build, sustain, and improve the nation's capacity to prepare for, protect against, respond to, recover from, and mitigate all hazards. New to the position, he spent his first 6 weeks visiting diverse regions of the country and speaking to those who responded to the tsunami in American Samoa (September 2009), flooding in Georgia (September 2009), and a wide variety of "everyday" events. Mr. Serino brings to his position 35 years of experience in state and local emergency management and emergency medical services, through which he has observed that Americans are resilient people.

Cross-Sector Teams Are Essential

Building on that idea, Mr. Serino also observed that team effort is needed to strengthen community resilience and that FEMA is not the only member of the team. Resilience depends upon partnerships among all important federal and national stakeholders, including the National Oceanic and Atmospheric Administration (NOAA), the National Weather Service (NWS), the Coast Guard, the Departments of Defense (DoD) and Health and Human Services (HHS), the Small Business Administration (SBA), and the Environmental Protection Agency (EPA). He noted, that while important, the federal government's role in disasters tends to be overemphasized, leading to a diminished focus on other critical players, namely state and local governments, nonprofits, the private sector, faith-based groups, and most of all, the public. Expanding on the notion that "all disasters are local," Mr. Serino added that response is local—it depends upon local fire, police, bystanders, and mayors before involving the tribal, state, and federal members of the team.

The Public Is the Best (Yet Untapped) Resource

Mr. Serino asserted that, while not yet fully engaged, the public is the best resource in responding to catastrophic events. He challenged those who approach the public as a liability in disasters. Mr. Serino discussed the potential advantages of education and training on rapid response, recovery, and adaptation to changing circumstances during a disaster, and he encouraged efforts to develop family plans and to expand public training in CPR, evacuation, and first aid. As a start, Mr. Serino noted the necessity of a basic emergency communications plan for all individuals.

Inclusive Approaches to Disaster Planning and Recovery Are Needed

Mr. Serino made the charge for changes in the approach to planning for disasters and recovery, arguing for plans that fully integrate the needs of vulnerable populations. He characterized the current approach as one in which plans are written to meet the needs of "average" people who have the material resources to take recommended actions, while the needs of those who cannot are relegated to appendices. Mr. Serino called for disaster plans that consider communities as a whole and that ensure provision of emergency supplies that meet the real needs of real survivors. As an example of the wrong kind of plan, he cited those that call for the distribution of military ready-to-eat meals (MREs), noting that they are certainly not appropriate for infants. Mr. Serino urged the development of disaster plans that account for diversity across a community as a matter of course rather than as an afterthought.

Finally, Mr. Serino concluded by further emphasizing the importance of proper communication before and after a disaster with the public. A team approach and commitment to the sharing of information empower a community to handle the challenges posed by disaster.

Summary by Kunal Rambhia

Resilience in the Public Health and Healthcare Sectors

Nicole Lurie, MD, Assistant Secretary for Preparedness and Response (ASPR), Department of Health and Human Services (HHS)

Dr. Lurie is charged with coordinating the federal government's healthcare response to large scale disasters. She shared her views on the definition and promotion of resilience, and she observed that the concept of resilience is now being integrated into federal disaster planning efforts. She offered as an example of this trend the emphasis on community resilience in the forthcoming National Health Security Strategy.

Recent Efforts to Rally Voters Reveal Lessons about Resilience

Dr. Lurie's experience during the 2008 presidential campaign influenced her views regarding community resilience and engagement. Upon reporting to her voting precinct as a volunteer, Dr. Lurie noticed that many of the staff filled traditional incident command system roles ("in charge, operations, and logistics") to organize the campaign's activities. She drew parallels to public health practice when she described her experience of going door-to-door as a potential model for countermeasure distribution, especially since the same population wide coverage would be necessary for success in both cases. Dr. Lurie was impressed with the energy that pervaded the community, noting "these are people who in public health we say are hard to reach, and yet we reached them . . . ." From her experiences, Dr. Lurie concluded that there are aspects of resilience that are not well understood, but may represent alternative ways for public health officials to engage with the communities they serve.

A Common Definition Can Advance Work on Resilience

To Dr. Lurie, one of the most exciting prospects of the Resilient American Communities conference was the opportunity for leaders in the field to align their views of the meaning of resilience. In her view, resilience is more than a synonym for emergency response, and she considers individual and community resilience to be distinct, though related, concepts.

Resilient Individuals Can Help Themselves and Others

Dr. Lurie's discussion of individual resilience focused on a set of attributes that would increase individuals' abilities to care for themselves, their loved ones, and/or their neighbors both during and in the aftermath of an emergency. Such traits include:

- Having the knowledge, education, training, and skills to be able to respond, as well as the motivation to do so
- Being physically well
- Having the supplies to shelter in place, including food, water, and necessary medications
- Having the ability to evacuate
- Knowing about medical problems and the behaviors necessary to maintain health
- Being psychologically healthy and resilient
- Knowing their dependents, or who they are dependent upon

Resilient Communities Have Strong Institutions, Social Networks, and Buildings

Dr. Lurie said she thought communities should be able to provide environments for people to be healthy, what she called "straight out public health." To the extent possible, the built environments in communities should be engineered with safety in mind. The healthcare system needs to be robust and flexible enough to provide needed medications and care during crisis situations.

Resilient communities should take steps to build social cohesion. Dr. Lurie suggested that all members of the community should have 3 people who are knowledgeable about their location and special needs so that during an emergency, there is an immediate, redundant response that need not rely on traditional first responders. Dr. Lurie encouraged the development of community cultural norms that motivate individuals to become ready, willing, and able to respond to a wide range of emergencies. One potentially useful federal intervention toward this end would be the creation of legal protections that allow for a more inclusive emergency response.

Dr. Lurie noted that one important but currently unknown factor is the "critical mass" needed for a community to be able to take care of itself during a disaster.

Resilience Should Become a Shared and Measurable Goal

In terms of the federal government's role in promoting resilience, the Assistant Secretary reflected that getting people galvanized around a common goal is one aspect of community resilience. She highlighted the role of technology in building resilience, noting that next-generation internet tools and social media are changing the way people—especially young people—interact with one another. Dr. Lurie concluded her remarks by calling for the development of methods to measure resilience within communities, saying, "What gets measured gets done."

Summary by Matthew Watson

Grounding Federal Policy in the Evidence About Resilience

Monica Schoch-Spana, PhD, Senior Associate, Center for Biosecurity of UPMC; Chairperson of the Resilience Research Work Group

Dr. Monica Schoch-Spana noted that a principal goal of the conference was to help direct federal policy using evidence from the field, including both academic research and practitioner experience. To that end, and in anticipation of the conference, the Center for Biosecurity convened a small group of leading disaster scientists to survey existing research and identify findings with potential relevance to federal policy on community resilience. Led by Dr. Schoch-Spana, this group drafted a research policy brief that was included in the conference materials.

In her remarks, Dr. Schoch-Spana outlined 5 main points from the brief:

1. Fragmented, incomplete, scattered, non-standardized, and oftentimes inaccessible data—on when and where losses occur, from what hazard and with which impacts (property or crop damages, business interruption and job loss, human fatalities and injuries)—keep people from realizing the true price paid with extreme events, and from knowing whether specific interventions designed to avoid or reduce losses are actually working.

2. Hazard mitigation—pre-disaster actions to prevent or minimize injury and death, property damage, and interruption of critical societal functions—provides a proven return on investment and is a cornerstone of community resilience.

3. Inclusion of nongovernment organizations, the private sector, and the general public in a locality's preparedness and response system increases disaster resilience by raising the quotient for creative problem solving amidst the ad hoc conditions of an extreme event. Such collaborative approaches are also the basis for successful mitigation and recovery.

4. Low income and minority communities bear the brunt of disasters and epidemics, but they also have stores of resilience in the social networks and resources that help them weather routine stresses and that can be tapped for preparedness, response, and recovery.

5. The recovery period represents an opportunity to create a more resilient community, as people learn that disasters do not simply happen to "other people" and more willingly embrace changes that reduce the chances and consequences of a future event.

Policy Implications

In conclusion, Dr. Schoch-Spana noted 2 key policy implications of these observations:

1. The nation needs a transparent, standardized accounting system for tracking the costs of hazards and disasters and for gauging the value of specific resilience-enhancing measures.

2. Localities and regions require federal resources (i.e., policy, finances, and technical guidance) to augment their institutional capacity for the 2 most transformative interventions—planning and coalition building that includes vulnerable populations.

Summary by Matthew Watson

Action Plan to Make Community Resilience a Reality—Part 1

Moderator: **Monica Schoch-Spana**, Senior Associate, Center for Biosecurity of UPMC

Panelists:

David Godschalk, Stephen Baxter Professor Emeritus of City and Regional Planning, University of North Carolina at Chapel Hill

Tim Lovell, Executive Director, Tulsa Partners, Inc.

Joseph Donovan, Senior Vice President, Beacon Capital Partners

Eric Toner, Senior Associate, Center for Biosecurity of UPMC

Overview and Background

Members of this panel focused their discussion on 2 specific action steps, below, that communities can take to strengthen resilience to extreme events and that the federal government could take to promote community resilience around the country. In addition to noting the importance of coalitions for resilience and sustainability, panelists also discussed the incorporation of hazard mitigation as a standard feature of city planning.

Action #1. Design Safer Hometowns Out of Harm's Way: *What federal policies might lead more communities to adopt land-use planning, zoning laws, building codes and other hazard mitigation strategies and to create a better balance between built and natural environments?*

Action #2. Strengthen Partnerships Between Government, Businesses, and Community Groups for Response and Recovery*: How can the federal government help more communities bring together all relevant stakeholders – including government, business and community, and faith based groups – in advance to plan effective for disaster response and recovery?*

A Certification Program to Help Communities Aspire to Resilience

Dr. Godschalk proposed that, to challenge and inspire communities to develop creative ways to mitigate the effects of disasters, a program analogous to the Leadership in Environmental Education and Design (LEED) could be helpful. LEED is a building rating system that has encouraged architects and engineers to design "green" buildings in support of developing sustainable American communities. A federally recognized resilience certification program would create incentives, such as increased competitiveness for grant monies, higher bond ratings, and lower insurance rates, to inspire communities to achieve higher levels of resilience. Program elements would necessarily include rigorous monitoring and re-certification processes, a national database, and state and federal technical assistance for communities.

The program would advance a coordinated mitigation strategy that links land use, zoning, building codes, transportation, housing, environmental protection, and economic development. "Safe growth audits" would determine the positive and negative effects of proposed development on community safety. For instance, new high density housing in a floodplain would have a negative effect on community safety. A "build-out analysis" could examine how future growth affects high hazard areas under current regulations, and new resilience elements could be added to a community's existing plan to sharpen the focus on hazard mitigation, community safety, and sustainability. Finally, all communities would perform a "no-adverse-impact test" of any new policies and programs to ensure that changes do not create additional risk.

Dr. Lovell, in his work at Tulsa Partners, has implemented some of these components and extolled their practical value to the community of Tulsa, OK. He echoed Dr. Godschalk's call for incentives and technical guidance from the federal government. Dr. Lovell provided the Green Globes example in Canada as a model, like LEED, to promote living safely and in harmony with the natural world.

Not All Partnerships Are Local

Dr. Lovell described the efforts of Tulsa Partners to mitigate the impact of floods, tornadoes, and other hazards within the city of Tulsa. Tulsa Partners grew out of multiple public-private partnerships in the area, beginning with the Storm Warn Management program, and leading to Project Impact in the 1990s, and most recently the Citizen Corps Program. Dr. Lovell noted that the federal role in building resilience is to provide funding and technical assistance to facilitate partnerships at the local level.

Dr. Lovell also presented a new paradigm for thinking about building resilience. Citing his collaboration with the Institute for Business and Home Safety and Save the Children, he noted that all partnerships are not local. Breaking the national, state, and local paradigm, Dr. Lovell called for partnerships that involve multi-sector groups working together to build resilient communities.

The Private Sector is a Key Partner in Emergency Management

Mr. Donovan called for the active engagement of the business community and building managers in local emergency planning. His personal experience with a 2006 measles outbreak in Boston led him to realize that public health and local businesses share a common mission of ensuring the health of building occupants and ensuring business continuity, an insight that inspired him to develop new relationships with public health groups around the country. From this effort, there has emerged an inclusive, non-competitive partnership of building managers, local business, and public health organization that share a common emergency preparedness mission.

Mr. Donovan also noted that, until recently, building managers and local businesses were not included in conversations about emergency planning and preparedness and had to force their way to the table. Mr. Donovan offered several specific examples of programs that have been effective or could be improved to better engage the business community in disaster planning and efforts to build resilience. He indicated that the DHS Infrastructure Protection Group, for instance, has a Regional Resiliency Assessment Program (RRAP) that should expand its focus to include public health and evacuation strategies. DHS should also look to improve the National Emergency Response and Rescue Training Program.

Mr. Donovan called for moving away from "one-off" encounters to sustained collaborations, along with concrete measurements of progress toward community resilience. As a useful example, he cited a private-public partnership among the Army Corps of Engineers, FEMA, local public health agencies, and downstream

communities that emerged to mitigate potential risks posed by the Howard Hansen Dam. Mr. Donovan encouraged DHS and the Defense Threat Reduction Agency (DTRA) to expand efforts around the *National Planning Scenarios* because they serve as tools for bringing communities and businesses together.

Finally, noting the vast amount of leased space occupied by the federal government, Mr. Donovan called upon the General Services Administration (GSA) and other federal agencies to actively engage property managers, facility managers, and communities in response and recovery planning for these facilities.

Emerging Healthcare Coalitions Must Be Nurtured

Dr. Toner described his work in assessing the Department of Health and Human Services' (HHS) Hospital Preparedness Program (HPP). Since 2000, the HPP has distributed approximately $3 billion to hospitals and healthcare organizations nationwide to support emergency planning and preparedness. One of the most important results of the HPP has been the development of healthcare coalitions that have joined hospitals, public health and emergency management agencies, and emergency services in collaborative planning. These newly formed health care coalitions, which are becoming the foundation of U.S. healthcare preparedness, have generally formed around a core of acute care hospitals and emergency response entities, but are now expanding into other parts of the healthcare sector.

The notion of "community" in the case of healthcare coalitions has been flexible, given that jurisdictional boundaries and hospital referral patterns are not necessarily aligned. Though varying in size and structure, these coalitions typically have come together for joint planning, drills, exercises, training and administration of grants—driven by the HPP and by Joint Commission emergency preparedness requirements for accreditation. Dr. Toner notes that the value of such coalitions was evident in healthcare sector response to the shootings at Virginia Tech (April 2007), the bridge collapse in Minnesota (August 2007), and the 2009 H1N1 influenza pandemic.

Dr. Toner also observed that most healthcare coalitions are relatively young and require additional support to grow and realize their full potential. He also noted that obstacles to their continued growth include reluctance to share proprietary information, lack of funds and staff, and rigorous grant requirements. In concluding, Dr. Toner called for greater congruence among the HPP, CDC, and DHS grant programs (with an emphasis on collaborative networks) and for the alignment of HPP with the Joint Commission Emergency Standards and CMS conditions of participation.

Conclusions

The panel stressed the importance of mainstreaming, sustaining, and, ultimately, institutionalizing programs that build community resilience. This is crucial to capture the gains already made and to weather the changes wrought by politics. It was roundly agreed that a community resilience certification program, like LEED, could create incentives and stability. Continued education, training, and efforts to foster multi-sector collaboration—similar to the Project Impact model—also can be effective in building community resilience. Finally, panelists agreed that the federal seed money is needed on the local level and that the federal government must remain flexible in its efforts to support development of community resilience.

Summary by Kunal J. Rambhia

Action Plan to Make Community Resilience a Reality—Part 2

Moderator: **Jennifer Nuzzo**, Associate, Center for Biosecurity of UPMC

Panelists:

Roz Lasker, Clinical Professor of Health Policy and Management, Columbia University Mailman School of Public Health

Meredith Li-Vollmer, Risk Communication Specialist, Public Health—Seattle & King County, WA

Irwin Redlener, Professor of Clinical Public Health and Director, National Center for Disaster Preparedness, Columbia University; Member, National Commission on Children and Disasters

June Gin, Manager, Disaster Resilient Organization Program, Bay Area Preparedness Initiative of the Fritz Institute, San Francisco, CA

Overview and Background

This panel continued the discussion of practices that communities can adopt to enhance their resilience to disasters and the support the federal government can lend to aid in the process. Panelists addressed 2 specific action steps and related questions:

Action #3. Engage the Public in Key Decisions About their Health and Safety: *How might the federal government support localities in actively engaging residents in policymaking for extreme events? What are the benefits of involving members of the public in decisions that affect their health and safety?*

Action #4. Ensure Adequate Protections for Vulnerable Populations: *What steps can the federal government take to assist communities in providing protections for vulnerable populations? What are the consequences of not ensuring an adequate safety net?*

Community Engagement Offers Local Knowledge, Improves Plans, and Builds Confidence

Dr. Lasker discussed the importance of including the public in emergency management decision making and emphasized that the brain power of the American public is one of the most valuable and underutilized resources for resilience. She suggested that people are more resilient when they have had a chance to think about disasters ahead of time, which allows for preparation and confidence building. Community engagement is necessary in the planning process because community members know the problems they will face, and they can account for the barriers that groups within the community will face. Noting that disaster plans must not put people in a bind, Dr. Lasker observed that when individuals are "noncompliant" in a disaster, their failure to follow directions is often because the actions they are instructed to take are not feasible or may create additional risk.

Finally, Dr. Lasker directed the audience to the manual, *With the Public's Knowledge: A User's Guide to the Redefining Readiness Small Group Discussion Process*, for help with facilitating community participation in decision making.

Advance Dialogue Builds Social Capital for the Next Emergency

In sharing her experiences as the lead of a project addressing prioritization of medical services during disasters, Dr. Li-Vollmer described the project's focus as that of determining the views of the public on decisions to dispense vital medical resources. She found that community members are capable of grasping difficult issues, engaging in productive and respectful dialogue, and raising issues that experts would not otherwise identify on their own. Through the project, community advocates and leaders were updated on the health agency's efforts, plans were developed for specific communities, and communication linkages became available that were then used to facilitate better decision making in response to the 2009 H1N1 influenza pandemic.

Poverty Creates "Hyper-Vulnerable" Populations

Dr. Redlener focused on the topic of population vulnerability, beginning with the suggestion that at a certain level, everyone is vulnerable, and very few can escape all hazards. He proposed that vulnerabilities are driven by both hazards and population characteristics, and that vulnerabilities associated with economic disadvantage, institutionalization, and language barriers can be addressed. He asserted that extreme poverty causes populations to be "hyper-vulnerable," and he noted that experience shows that through all stages of disaster—from initial response through long-term recovery—people who live in poverty are far less resilient than other populations.

Vulnerability is a Mainstream Planning Issue, Not an Afterthought

Dr. Redlener observed that the problems of vulnerable populations, such as those mentioned earlier, can be plan "busters" if they are not considered in pre-disaster planning. Disaster plans that fail to take into account the barriers associated with these groups can easily falter in the stress of an emergency. He outlined 3 methods for helping ensure greater protections for vulnerable populations in disasters: (1) ensure that all populations are considered in disaster planning by including vulnerable populations in the main disaster plan; (2) mandate "all-in" disaster plans, which account for the problems of vulnerable populations, as a requirement for federal funding; (3) capitalize on

community strengths that we know exist, such as social networks, in order to plan, prepare, and communicate more effectively.

Community-Based Groups Provide an Important Safety Net but Need Help Preparing for Continuity of Services Following a Disaster

Dr. Gin described her work as the manager of the Disaster Resilient Organization program (DRO) at the Fritz Institute's Bay Area Preparedness Initiative. She described the critical role that community-based organizations (CBOs) play in providing vital services and their need to continue functioning after a disaster. However, Dr. Jin also noted 3 limitations: (1) CBOs are not well integrated into government emergency and response networks; (2) Very little is known about CBOs' capacity to work after a disaster, which makes planning difficult; and (3) Still less is known about how CBOs that are already stressed daily would be able to prepare for providing services after a disaster.

In response, the DRO initiated research to identify attributes of success in disaster preparation and to gauge the level of preparedness of CBOs in San Francisco. They also developed measurable standards for resilience and provided one-on-one technical assistance and guidance to CBOs in meeting those standards. Dr. Gin indicated that CBOs need external guidance, a structured process, and to see that other sectors are equally committed to disaster preparation for vulnerable populations. Finally, she discussed the need for CBOs to think beyond evacuation to being prepared to operate in the days and weeks after a disaster.

Conclusions

The panel concluded that true preparedness requires a shift toward actively engaging the public and getting its input in disaster planning. Doing so strengthens plans and helps to identify unanticipated problems. Some local efforts to do this are already underway; however, the federal government can contribute to this process by providing funds and technical guidance.

Additionally, economically and socially marginalized populations require enhanced protections during emergencies, which is an important function of CBOs, provided that CBOs are able to function during and after a disaster. Finally, evidence of government investment in the protection of vulnerable populations is vital to the continued motivation of CBOs in their efforts to build resilience.

Summary by Tara Kirk Sell

Lessons from History—and from Sea Level

John M. Barry

Author and historian John Barry is well suited to discuss community resilience, as two of his award-winning books are detailed accounts of significant disasters in American history. *The Great Influenza* (2005) is widely regarded as the definitive history of the 1918 influenza pandemic, and *Rising Tide* (1998), details the 1927 flooding of the Mississippi River, an event that had a direct effect on approximately one million Americans. Barry, who resides in New Orleans, also lived through Hurricane Katrina, continues to experience its aftermath, and currently serves on several regulatory and planning boards devoted to hurricane preparedness in New Orleans. Barry's presentation, "Lessons from History, and from Sea Level," was informed by his broad expertise and his personal experience.

Leaders Should Tell the Truth During Disasters

The first lesson that Barry identified is that leaders should tell the truth during a disaster. He distinguished telling the truth from "risk communication," a term he dislikes because it implies the management of information. Barry asserted that leaders should do more than disseminating advice or directions; they should establish themselves as credible sources of information by describing events as they unfold in as much detail as possible. According to Barry, Philadelphia's city officials were unwilling to acknowledge the severity of the 1918 influenza pandemic, insisting instead that the disease was the same as seasonal flu. During the 1927 flood, New Orleans' leaders were similarly reluctant to tell the truth, and newspapers refused to report on the height of the Mississippi River. In both instances, the general public was well aware of the severity of their respective disasters, and responded with outrage at government attempts to pacify them. In contrast, despite the myriad recovery problems that have plagued the city in the wake of Hurricane Katrina, Barry defended the New Orleans evacuation effort as being largely successful in that the city was able to evacuate 80% of its population in approximately 36 hours precisely because leaders were well prepared and engaged with the public.

Chaos Can Be Good

The second lesson Barry noted was that the chaos that ensues during and following a disaster is what sparks survivors to fight to keep themselves, and, when

possible, their family, friends, and neighbors alive. Barry further observed that most disasters tend to bring out the best in people. Therefore, at the very least, he argued, chaos and the response it inspires should not be interfered with by the government. As an example, he pointed out the Red Cross's estimate that, during the 1927 flood, approximately 150,000 people were rescued from rooftops and trees, with no government involvement in those efforts. In contrast, during Hurricane Katrina, some government actions actually interfered with citizen rescue and aid efforts, as when a FEMA employee allegedly stopping trucks that were carrying water bound for the Superdome. Clearly, Barry noted, an effective response should harness these altruistic tendencies, or at the very least, not stifle them.

Planning Does Not Equal Preparation

Barry's final lesson was that planning does not equal preparation. To illustrate this point, he compared evacuation efforts in Houston during Hurricane Rita, which were thwarted by gridlock and confusion, with the evacuation in New Orleans during Hurricane Katrina, which he described as relatively orderly. Barry explained that an evacuation was attempted in New Orleans in the previous year when Hurricane Ivan hit, and the city made significant changes to its system in response to the lessons learned from that "full scale exercise." Barry noted that it might be useful to consider the recent experience with the 2009 H1N1 influenza pandemic as another such exercise, and take the opportunity to evaluate existing plans and systems should and rework them to incorporate the lessons learned during the response.

Summary by Matthew Watson

How to Survive the Big One—Resilience to a Major Earthquake

What changes in social and built environments could help California communities withstand the shocks associated with a catastrophic earthquake now being forecasted by experts? What kinds of federal policies could help facilitate those needed changes?

Moderator: **Dennis Milleti**, Professor Emeritus of Sociology, University of Colorado at Boulder

Panelists:

Arietta Chakos, Director, Acting in Time Advance Recovery Project, Harvard Kennedy School

Ana-Marie Jones, Executive Director, Collaborating Agencies Responding to Disaster (CARD), Alameda County, CA

Karen Marsh, Director, FEMA Community Preparedness Division

Robert Olshansky, Professor of Urban and Regional Planning, University of Illinois at Urbana-Champaign

Adam Rose, Research Professor of Policy, Planning and Development, University of Southern California

Ellis Stanley, Sr., Director, Western Emergency Management Services at Dewberry, Los Angeles, CA

Overview

As an introduction to the first roundtable, participants viewed *Preparedness Now*, a video prepared by the U.S. Geological Survey (USGS) Multi-Hazards Demonstration Project and the Art Center College of Design for the Southern California ShakeOut exercise. The video illustrated the many anticipated effects of a large scale earthquake along the San Andreas Fault. Discussants addressed a broad range of topics, including the need for greater diversity among the actors involved in developing a community's approach to disasters and the benefits of investing in pre-disaster hazard mitigation.

New Players and Approaches Are Necessary to Create a Culture of Resilience

Participants emphasized the importance of creating a culture of resilience to facilitate an effective and efficient response to a catastrophic event as well as a successful recovery. Mr. Stanley explained that, while definitions of "resilience" may still be up for debate, the term generally embraces the concepts of a community's adaptability, agility, and alignment. These aspects, proposed Mr. Stanley and Ms. Marsh, can emerge through social networks that incorporate diverse partners from groups beyond the bounds of the traditional disaster establishment. Ms. Marsh specifically noted that faith-based and other community groups are often more effective in reaching far corners of a community, and she proposed that all members of civil society play a role in building a resilience culture.

According to Professor Rose, businesses also have a role to play in reducing losses and reversing the interruption of goods and services that often occurs in a major disaster. Rose emphasized that business

interruption begins with an event and continues until the economy recovers; however, efforts at the micro, industry, and macro levels can enhance business continuity. While larger economic systems may have an adaptive element, individual businesses need to plan for their continued operations, and it is beneficial for them to adopt an all-hazards approach in planning.

Ms. Jones emphasized that Americans' lack of preparedness stems from the failure of officials to convince the public of the importance of preparedness. She observed that officials rely upon a fear-based approach to disaster readiness, when it would be more effective to demonstrate the day-to-day benefits of preparedness efforts. Ms. Jones then explained how her organization helps nonprofits prepare for disasters by showing what they gain in the short run, offering as an example, that the incident command system for coordinating groups can also be applied when writing grant applications. Ms. Jones contrasted this "prepare to prosper" approach with the typical "prepare for disaster" approach.

Ms. Jones argued, as did Mr. Stanley, that the power of social media has yet to be tapped to advance preparedness among the general public. Stanley noted that www.ready.gov may have benefits, but until it and other preparedness campaigns are wed to social media and reach a younger audience, its impact will be limited.

Actions at the Federal Level Have an Impact on Community Resilience

Dr. Olshansky emphasized that all sectors of society may play a role in recovery, but the federal government has an especially important role in helping communities recover and rebuild, given the extensive damage and disruption associated with a major earthquake.

Professor Rose encouraged the federal government to circulate best practices to enhance business continuity, offering as an example those learned during the ShakeOut exercise, which included maintaining communications functions, partnering with transportation companies to move food and water, using trailers for banks to serve clients, requalifying people for loans, and providing incentives and bonuses for projects that finish early.

Ms. Chakos challenged the federal government to increase the amount of annual funding for disaster mitigation from $100 million to at least $1 billion. She argued that that it makes more sense to invest in proactive interventions at the local level and reduce risk before a disaster occurs than to wait for the worst to happen and then react. Ms. Marsh asserted that the federal government needs to take seriously its role in cultivating community resilience, and suggested that a paternalistic stance prevents progress.

Ms. Marsh explained that federal agencies do have an interest in a comprehensive emergency management framework—that is, mitigation, preparedness, response, and recovery—but lack of funding and research have made it difficult to execute. Ms. Marsh argued that efforts to build community resilience should rest upon a sound evidence base.

Dr. Olshansky emphasized that coalitions that incorporate a broad range of local players in developing and executing disaster policy could benefit from more federal support.

Earthquakes Present Longer Term Recovery Challenges and Mitigation Opportunities

An earthquake will cause immediate damage and trigger a chain of events that will complicate recovery. Dr. Milleti emphasized that only 50% of the losses from an earthquake will be the result of structural damage. The rest will be the result of associated events—fires that displace communities, water systems that take months to repair, and buildings that collapse due to sustained shaking.

Dr. Olshansky stressed the importance of thinking about earthquake protection in a broader sense that embraces mitigation and recovery. Disaster mitigation is particularly important because earthquakes occur without warning, and communities are either ready or they are not. New building codes can facilitate construction of seismic-resistant structures in the future, but those codes do not address the dangers of structures built before safer codes were adopted, leaving communities vulnerable. Dr. Olshansky called upon the federal government to support research and provide guidance on this issue.

Dr. Olshanksy also noted that Seismic Advisory Councils have been outstanding models of collaboration and planning at the local level. While the federal government used to support some of these councils, it no longer does. Dr. Olshansky urged the federal government to resume its support.

Recovery may begin the moment an earthquake happens, Olshansky explained, but the full process of recovery

occurs over the long term. He emphasized that, while recovery is the ultimate test of resilience, it presents an opportunity to advance resilience, as mitigation measures can be adopted against future events.

Conclusions

Discussants agreed that a resilient community is one that has engaged all sectors—government, businesses, nonprofits, and the public at large—in solving potential problems associated with disasters. The federal government can play a positive role in enhancing a community's resilience to earthquakes and other extreme events by developing the local capacity for coalition building, supporting disaster mitigation activities, and rendering aid that facilitates local recovery.

Summary by Nidhi Bouri

How Are We Doing with Flu? H1N1 Revelations about Resilience

Which federal preparedness policies helped communities cope with the medical and social demands imposed by the 2009 H1N1 influenza pandemic? What additional policies might enable localities and states to curtail the effects of an emergent epidemic, including a moderate-to-severe influenza pandemic?

Moderator: **Ann Norwood,** Senior Associate, Center for Biosecurity of UPMC

Panelists:

Brooke Courtney, Associate, Center for Biosecurity of UPMC

Serena Vinter, Senior Research Associate, Trust for America's Health

Cynthia Dold, Healthcare Coalition Program Manager, Public Health—Seattle & King County, WA

Alonzo Plough, Director, Emergency Preparedness and Response Program, Los Angeles County Public Health Department

Sandra Crouse Quinn, Associate Professor of Behavioral and Community Health, University of Pittsburgh Graduate School of Public Health

Overview

Roundtable participants considered ways in which federal policy has helped or hindered community resilience during the 2009 H1N1 influenza pandemic. They also explored ways in which federal initiatives could bolster community resilience in the face of other potential public health emergencies such as an avian flu pandemic or a deliberate release of anthrax.

Federal Grants Have Helped, but Desired Partnerships Require Further Support

Dr. Norwood opened the discussion by querying discussants about the effect of annual federal funding on community responses to the 2009 H1N1 influenza pandemic. She gave as examples the Public Health Emergency Preparedness Program (PHEP), the Hospital Preparedness Program (HPP), and grants from the Department of Homeland Security.

Ms. Courtney observed that federal grants are critical to the creation of resilient communities, given the enormous daily challenges faced by local public health agencies. She noted that it can be difficult for public health agencies to deliver even basic services. And when underfunded and/or understaffed, it can be impossible for agencies to do the work of building resilience, despite the importance of those efforts. Federal grant funding could provide the support that health departments need to allocate staff to meet with community organizations, raise awareness about preparedness, and engage in other efforts that help build community resilience.

Dr. Quinn added that the public health response to the influenza pandemic has been "heroic," given the degree to which public health departments are underfunded. She noted that more funding for public health from the state and federal levels would be ideal, but she also observed that a stronger case must be made for public health as an essential component of community resilience.

Ms. Vinter cited Trust for America's Health 2009 *Ready or Not* report, which indicates that federal grant funds have been crucial in preparing local and state public health agencies to respond to 2009 H1N1 influenza. For example, for the past 7 years, Arizona's Department of Health Services has used PHEP grant funding to engage tribal governments in preparedness efforts, which strengthened community resilience and made the state better able to handle the influenza outbreak when it struck this year [*Ready or Not? 2009: Protecting the Public's Health from Disease, Disasters, and Bioterrorism*. Trust for America's Health. December, 2009.]

Dr. Plough noted that LA County received $40 million in pandemic appropriations that proved critical for mass

vaccination and laboratory response efforts. Difficulties in responding to the 2009 H1N1 influenza pandemic, however, make it clear that community partnership building must be a priority for public health preparedness in the future. Preparedness funds have helped collaboration among the "usual partners," such as public health and emergency management, but additional partnerships with community-based organizations (CBOs) and nongovernmental organizations (NGOs), for example, are needed for greater progress toward resilience.

Dr. Plough challenged federal government officials to think of ways in which funding streams that now support preparedness can be used to support activities along a continuum that includes resilience and recovery rather than being limited to response.

Response to 2009 H1N1 Influenza—Successful Overall, but Some Groups Remain Marginalized

Dr. Norwood asked the panelists to consider whether the experience with pandemic influenza has revealed gaps in community resilience, and, if so, how federal policy might help address those deficiencies.

Ms. Vinter observed that, overall, the federal government has done a good job with promoting community resilience by maintaining open and honest communication about what was and was not known about the outbreak.

Drs. Quinn and Plough both proposed that healthcare inequities and lack of access posed the greatest challenges in response to the influenza pandemic, because, they argued, the federal government did not acknowledge or attempt to ameliorate disparities in access to or delivery of healthcare. Regarding communication, Dr. Plough pointed out that in an emergency, it may be difficult to communicate new messages to groups that are marginalized and that may not be ready to receive and respond to messages from government or public health officials. Drs. Plough and Quinn concluded that, before the next disaster, the federal government should address issues of equity and access in health care, and should review and improve its communications and policies and practices related to community engagement.

Ms. Dold thought the response to the 2009 H1N1 influenza pandemic—vaccination, communications, and collaboration between medical and public health sectors—was successful, especially considering the scarce resources available at the local public health level. She observed that the effort felt like a "shoestring response" despite years of federal funding. This effect was compounded by budget shortfalls and layoffs at public health agencies around the country.

Ms. Dold did note the need for work on community engagement and public feedback, specifically with regard to vaccine distribution, and she emphasized that the federal, state, and local governments need to "tap into" the thinking and experience of the public in order to respond to events more effectively in the future.

Legal Tools Invoked to Aid Response to the 2009 Pandemic Were Helpful

Dr. Norwood also asked the panelists to comment on legal actions taken by state and local officials—did the declaration of a public health emergency and the invocation of other legal tools and authorities aid the response? Do legal impediments remain that might inhibit community resilience in a future health emergency?

Ms. Courtney found that the legal tools employed during the 2009 H1N1 pandemic greatly facilitated federal, state, and local response. She noted specifically the Public Readiness and Emergency Preparedness Act, which authorizes the Secretary of HHS to issue a declaration providing immunity from legal liability for claims arising from a public health emergency (regardless of other emergency declarations); emergency declarations at the federal, state, and local levels; Emergency Use Authorizations for medical countermeasures, and waivers of section 1135 of the Social Security Act [42 USC §1320b–5], permitting the Secretary of HHS to "waive certain requirements for healthcare facilities in response to emergencies" [U.S. Food and Drug Administration. Emergency Preparedness and Response. Emergency Use Authorization Overview. Updated November 17, 2009]. According to Ms. Courtney, the 2009 H1N1 influenza pandemic presented a good opportunity to implement these tools all at once and to work out any remaining problems.

Some of these legal tools, however, require further clarification as do their implications in a public health crisis. For example, while legal protections for volunteers are adequate, there are few protections for paid healthcare workers in emergencies. Ms. Courtney called for a review of legal impediments that remain.

Conclusions

In closing, Dr. Norwood proposed 3 implications for federal policy based on discussant remarks:

1. Future guidance for federal public health and healthcare preparedness grants should specify the importance of involving stakeholder groups such as faith-based organizations, NGOs, schools, and businesses in planning for disasters.

2. To increase community resilience, federal grant programs should include a focus on community engagement mechanisms to increase the participation of all ethnic and cultural groups in preparedness activities.

3. The federal government should fund public health broadly, reverse the trend of cutting funding of public health grants, and sustain investments to stimulate development of healthcare coalitions.

Summary by Crystal Franco

Closing Remarks

Thomas V. Inglesby, MD, Director, Center for Biosecurity of UPMC

Dr. Inglesby closed the conference by summarizing main points of the day's discussions:

A program to certify resilient communities could be valuable to community resilience efforts nationwide. Such a certification, or "seal of approval," could be tied to better insurance rates or increased bond ratings, thus creating an immediate incentive for communities to enhance their resilience even in the absence of a disaster. Moreover, a rating system built upon a private-public partnership could help insulate community resilience efforts from the vicissitudes of changing political administrations and also contribute to the program's overall sustainability.

Methods for establishing the true costs of disasters are needed. The country needs a rational approach to collecting information on disaster-related losses. We need better baseline information on when and where losses occur, from what hazards, as well as the local impact in terms of human fatalities and injuries, property and crop damages, and job loss and business interruption. Also necessary are methods for assigning value to resilience-building efforts. As one speaker put it, the "sale has not been made" to the American public on the benefits of investing in greater resilience to extreme events.

Coalition building among diverse partners is a key pathway to disaster resilience. Mitigation, preparedness, response, and recovery must be shared responsibilities across all sectors of society including government, private industry, community-based groups, and the larger public. Greater resilience is present in communities that have nurtured partnerships among all these stakeholders. Regional healthcare coalitions, for instance, have emerged as formidable actors in managing public health emergencies, as was demonstrated during the response to the 2009 H1N1 influenza pandemic.

Practices that put communities at risk must be reversed. Intensive development in hazard-prone areas such as flood plains, fragile coastal areas, and wildfire-risk areas should be curbed. More communities ought to adopt land-use planning and building codes that optimize safety. We cannot continue to ignore the fact that how we design our hometowns can put residents at greater or lesser risk of the impacts of a natural disaster.

Public engagement in key policy decisions about disasters and epidemics is vital to community resilience. The brainpower of the American public is a principal asset in building community resilience. Members of the general public can handle the complex issues involved in disaster planning, and they can improve the feasibility and acceptability of plans by adding their local knowledge and judgments.

Disadvantaged populations required enhanced protections against the disproportionate impact of extreme events. Social service agencies and community- and faith-based organizations that routinely interact with marginalized groups are important partners with government in creating a safety net for these populations in disaster. Such nonprofits can benefit now from more technical guidance and financial assistance to help them plan for the continuity of operations during and after an emergency.

Federal grants are necessary to building resilient communities. The current experience with the 2009 H1N1 influenza pandemic underscores the need for stable public funding to aid in the management of health emergencies and other extreme events. Expanded grants, longer grant cycles, and more reasonable grant

requirements would increase the effectiveness of federal public health preparedness funding. Moreover, increased federal support could facilitate enhanced collaboration among health and disaster agencies, private industry, and community- and faith-based groups.

The federal government should increase funding for disaster mitigation. The federal government spends the lion's share of disaster assistance to states and localities in the form of after-the-fact responses, rather than proactive, preventive measures that reduce risk. Yet, a 2005 Congressionally mandated, independent study concluded that each dollar spent in FEMA hazard mitigation programs saved society an average of $4 in future avoided losses.* This cost saving potential should be reflected in the federal budget. [**Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities*. Multi-Hazard Mitigation Council (MMC). 2005. Washington, DC: National Institute of Building Sciences.]

The government should not impede the general public from engaging in self help during disasters. Private citizens and emergent groups often act as the true "first responders" in extreme events. Leaders should, in the words of John Barry, "ride the chaos," and avoid getting in the way or erecting barriers when people organize themselves and respond creatively to disaster.

Leaders must tell the truth during disasters and epidemics. Author John Barry distinguished between telling the truth and managing the truth, emphasizing that leaders must honestly inform the public about what is happening during an extreme event. Officials should resist the impulse to manipulate the facts for politically expedient ends or out of an unrealistic fear of inciting public panic. Federal government officials must be transparent about their decisions and effective in communicating the reasoning behind them. Telling the truth will help preserve the public's trust in government.

Scenarios are valuable because they promote joint problem solving and help build social ties among participants. While the Department of Homeland Security (DHS) has developed 14 national planning scenarios, to date, all attention has focused on just 1, which involves an attack with aerosolized anthrax. DHS should expand its focus to other scenarios for their value in bringing groups together for collaborative planning and promoting the exchange of ideas across traditional boundaries (called "de-silo-ization" by one speaker).

Lessons from past and present experiences must be identified, disseminated, and applied in the future. Many single initiatives represent the benefits of enhanced disaster resilience, such as FEMA's Project Impact hazard mitigation program in 1990s, planning supported by local seismic advisory councils in earthquake prone areas, and public drills like the Great California ShakeOut that incorporate all sectors of society. Greater efforts must be made to synthesize and learn from these experiences, including at meetings such as this one, with participants forming a collective voice to promote resilience.

Summary by Tara Kirk Sell