Update on Citizen Preparedness Research

CITIZEN PREPAREDNESS REVIEW

Community Resilience through Civic Responsibility and Self-Reliance

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EXECUTIVE SUMMARY

Citizen Preparedness Review (CPR), Issue 5, provides an update on current citizen disaster preparedness research. CPR Issue 3 summarized preparedness research conducted through spring 2006. Since that time, several key studies have been released that allow us to understand how Americans' perspectives on disaster preparedness have or have not changed. Additionally, several studies included questions exploring contextual factors, such as an individual's prior experience with disasters or interactions with disaster planning at work or school, to help understand the potential impact these contextual factors may have on an individual's likelihood to prepare for disasters. This review summarizes these studies and shows how they have made important contributions to understanding the current levels of citizen disaster preparedness and, as importantly, the barriers and potential motivators to preparedness. Understanding how these factors affect citizen preparedness will help to inform future citizen preparedness outreach activities.

Specific conclusions include—

- *Individuals may be less prepared than they think.*

  Asking people specific questions related to their preparedness behaviors indicates that they are less prepared than they think. About one in two individuals respond that they have an emergency preparedness kit. When asked to list the items in their kit, however, the number of individuals who report sufficient items in their kit drops to around one in three (Center for Catastrophe Preparedness and Response [CCPR], 2006).

- *Surveys are exploring more than a kit and a plan.*

  Surveys are beginning to explore other aspects of preparedness besides having a home disaster supply kit and a plan.

Other areas explored include compiling smaller "go bags" that can be used during an evacuation, volunteering for emergency preparedness organizations, and learning how to find the emergency broadcasting channel on the radio.

- *New potential barriers to preparedness are beginning to be explored.*

  Recent surveys are beginning to more fully explore barriers to citizen preparedness. Barriers that have been identified include a sense that the threat is not urgent enough, unwillingness to leave pets behind during a disaster, being physically unable to prepare due to a disability, the need to care for someone else who is not physically able to evacuate, and the belief that they are already prepared.

> **New factors have been shown to affect the level of personal preparedness.**

- *New factors have been shown to affect the level of personal preparedness.*

  Surveys have identified new factors such as employment status and caring for school-aged children that have been shown to have an effect on a person's level of preparedness. Full-time employees have the highest levels of personal readiness compared with other types of employees. Individuals with school-aged children also report higher levels of individual and family preparedness. Also, perceptions of individual preparedness are being explored in connection to perspectives on the adequacy of community preparedness plans.

- *Levels of preparedness depend on geographic location.*

  Levels of preparedness have been shown to vary greatly depending on which region of the country is studied. Seventy-three percent of Miami residents have prepared a disaster supply kit compared with only 32 percent of Chicago residents (Council for Excellence in Government [CEG], 2006).

- *Evacuation is an emerging area of exploration.*

  Surveys show significant gaps in an individual's ability and willingness to evacuate when asked to do so. One study indicates that when an evacuation notice is given, nearly half of individuals will wait to evacuate until their concerns for loved ones are addressed (National Center for Disaster Preparedness [NCDP], 2007).

It is our intention to collect and analyze the broadest scope of studies in the critical field of citizen preparedness. We hope that the availability and analysis of these CPRs will encourage preparedness organizations to assist in this effort by providing their own research for inclusion.

INTRODUCTION

CPR Issue 3 summarized preparedness research conducted through the spring of 2006. More recent research has added to the depth and breadth of disaster preparedness research. This CPR provides an update of the current research environment, summarizing key preparedness studies and findings, with an emphasis on those surveys conducted since spring of 2006. As an emerging issue, this CPR also focuses on willingness and preparedness to evacuate.

METHOD

As stated, *CPR Issue 5* focuses primarily on those studies conducted since spring 2006. Six major national studies and several State and regional studies have been analyzed for this CPR. These studies are included in the Citizen Preparedness Surveys Database (also known as "the Database"), a repository of household disaster preparedness studies conducted after September 11, 2001. The criteria for including studies in this database are—

- The study must include a survey of households.

- The survey must examine individual concerns about or preparedness for a disaster or terrorist attack.

- All studies must have been conducted after September 11, 2001.

A majority of studies in the Database were found through a systematic review of the Internet and Web sites of organizations currently involved in this area of research. Key words (e.g., "disaster preparedness," "citizen readiness survey," "risk," etc.) were used on several academic databases and Internet search engines.

At the time *CPR Issue 5* was written, the Database contained 50 surveys that met the selection criteria, many of which were repeated across multiple years. The surveys came from different sources, including State and local governments; academic and nonprofit organizations; news organizations; and private corporations. The database of surveys is available on the Citizen Corps Web site at http://www.citizencorps.gov/ready/research.shtm. Unless otherwise noted, all survey dates refer to the dates the studies were fielded.

How to Interpret Results

When analyzing the different results from the surveys in this and other CPRs, it is clear that different surveys can produce different results using what seem like similar questions. Some of the differences can be attributed to differences in the population surveyed or the random errors that affect all sample surveys. The larger differences, however, are more likely to be a result of differences in how questions are worded, different response scales, the type of data collection method (telephone, mail, Web), the way results are presented, or the primary theme or topic of the survey (i.e., a specific hazard or multiple hazards). To interpret the data from these surveys accurately, it is important to understand these differences. The specific surveys analyzed in this CPR are cited in the last page and readers are encouraged to review the actual surveys themselves.

For example, studies that attempted to measure whether households have supplies that are part of disaster kit yielded a wide range of results from similar questions. Respondents' answers depended both on how the question was asked and the choice of answers provided. For example, the National Center for Domestic Preparedness (NCDP, 2006) asked if the family emergency plan includes different items with "all," "some," or "none" being the answer choices.

The American Public Health Association (APHA, 2007) asks if they have done what the experts recommend people do to prepare for an emergency situation with "have done this" and "have partially done, but maybe not enough" as the answer choices. As this example illustrates, the wording and options provided complicates the ability for direct comparison of findings. Therefore, it is important not to compare the results of these two questions against each other since they not only frame the question in different ways, but also provide different responses. Rather, the focus is to look across many surveys to identify trends in the surveys and in their findings. This should be kept in mind while reading through this CPR.

Update of Preparedness Research

Many preparedness surveys have asked questions about similar concepts around household disaster preparedness—such as whether individuals have a disaster kit or made a plan—which provides an unusual opportunity to look across multiple surveys and understand more wholly the status of individual disaster preparedness in the United States. Similarly, a few surveys have asked the same questions across multiple years, providing the opportunity to look at longitudinal trend data. As mentioned earlier, the results related to household preparedness can differ from survey to survey, which can often be attributed to question wording and differences in the sample. The actual questions from these surveys are presented in the charts that follow to provide a side-by-side comparison of similar questions asked on specific issues. Despite the differences in wording, data from the surveys that follow conducted between 2005 and 2007 clearly illustrate the overall national trend: individuals are not sufficiently increasing preparedness for disasters. A summary of results related to individuals having a kit and a plan is provided in Tables 1 and 2.

> " The overall national trend: individuals are not sufficiently increasing preparedness for disasters. "

Table 1: Sample Emergency Supply Kit Questions—2005–2007

Sponsoring Organization	Question		2005	2006	2007
Council for Excellence in Government (CEG) *(National)*	Tell me if you have actually done it, have considered doing it, or have not considered doing it: prepared a Disaster Supply Kit with emergency supplies like water, food, and medicine that is kept apart from everyday use [have actually done].		43%	42%	
National Center for Disaster Preparedness (NCDP) *(National)*	Does your family emergency preparedness plan include all, some, or none of the following: at least 2 days of food and water, a flashlight, a portable radio and spare batteries, emergency phone numbers, and a meeting place for family members in case of evacuation?	All	31%	31%	31%
		Some	13%	10%	11%
		None	1%	1%	1%
		No emergency plan	55%	58%	57%
Center for Catastrophe Preparedness & Response (CCPR) *(New York)*	Have an emergency supply kit in the home that can be used to shelter without power during a serious emergency. (*of those with a kit)	Have a kit		50%	
		With flashlight*		90%	
		With radio*		75%	
		Has enough food*		55%	
		Has enough water*		36%	
American Public Health Association (APHA) *(National)*	The following is a list of things that public health experts recommend people do to prepare for an emergency situation. Indicate whether you have actually done it, have considered doing it, or have not considered doing it. Have a disaster supply kit separate from everyday supply of items.	Have done this			21%
		Have partially done, but maybe not enough			52%

Table 2: Sample Disaster Plan Questions—2005–2007

Sponsoring Organization	Question		2005	2006	2007
Council for Excellence in Government (CEG) *(National)*	Please tell me if you have actually done it, have considered doing it, or have not considered doing it [have actually done].	Prepared a formal family communication plan to be able to contact all family members in case of a natural disaster or terrorist attack	36%	38%	
		Established a specific meeting place in the event you and your family cannot return home and or evacuate	25%	21%	
National Center for Disaster Preparedness (NCDP) *(National)*	Do you have an emergency plan that all the family knows about?		43%	45%	43%
Center for Catastrophe Preparedness & Response (CCPR) *(New York)*	Have a household emergency preparedness plan?			63%	
	% of respondents who have *never* practiced their household emergency preparedness plan.			69%	
American Public Health Association (APHA) *(National)*	The following is a list of things that public health experts recommend people do to prepare for an emergency situation. Indicate whether you have actually done it, have considered doing it, or have not considered doing it. Communication plan to contact family in emergency.	Have done this			18%
		Have partially done, but maybe not enough			43%

Are more individuals making disaster preparedness kits and plans?

Household survey data over the past 2 years reveal that we are not making sufficient progress in motivating citizens to take these specific measures to prepare. Two aspects of individual preparedness that are widely promoted are having a disaster supply kit and making a plan. Thus, measures of the prevalence of households who report having created a kit and made a plan are standard items used by many surveys to gauge citizen preparedness and therefore can provide important insight into changes in the level of citizen disaster preparedness.

NCDP's survey indicated no increase in the percentage of families with a complete family emergency supply kit (31% NCDP, 2005 vs. 31% NCDP, 2006 vs. 31% NCDP, 2007). Additionally, there was only a slight change observed in the number of citizens who reported that they had prepared a family communication plan (36% CEG, 2005 vs. 38% CEG, 2006).

In an APHA (2007) survey, only 21 percent of participants indicated they had created a separate disaster supply kit. Explanations for this lower result may include the particular survey methodology used. Specifically, APHA used a Web panel instead of a telephone survey methodology. Web panel methodology can be less reliable because Web panelists "opt in," making participation no longer random and preventing the survey from being defined as a random sample. Several additional factors may have contributed to the noted decrease in percentage of survey participants who claimed they had a disaster supply kit. In the context of this survey, researchers focused on "public health disasters," which was found to be a term that did not resonate well with respondents. Also, response options to this question included "have done this" and "have partially done this, but maybe not enough" (Macro, 2005).

Have individuals compiled adequate disaster preparedness kits and plans?

All of the household preparedness surveys analyzed in this review gathered their information from respondents who self-reported their preparedness behaviors. Of concern is that organizations involved in disaster preparedness may not be able to rely on these overall self-reports of preparedness measures (e.g., those who report having prepared a kit and a plan) to gauge levels of citizen preparedness. As noted by several of the surveys above, the more specific a question is about preparedness behaviors (i.e., the elements that are in a kit and the specifics of the plan that was made) the lower the percentage of individuals who report having conducted the preparedness measure to an adequate degree. For example, in a recent survey conducted in

New York by the Center for Catastrophe Preparedness & Response (CCPR), 50 percent of respondents reported having a kit with emergency supplies. When these respondents were probed to list what specific supplies individuals had in their kit, however, only 55 percent had enough food, and only 36 percent had enough water to shelter in their homes without power during a serious emergency. Although half of citizens reported having disaster supply kits on hand, a much smaller number reported having kits that contain critical elements. Finally, the survey found that although 63 percent of New Yorkers have a household emergency preparedness plan, about 69 percent of respondents with a plan have never practiced it (CCPR, 2006).

These data indicate a disturbing reality that individuals who have put together some elements of a kit or plan may consider themselves to be prepared, when in actuality, they are not. As described above, many individuals have kits and/or plans that lack essential components and would prove inadequate in the event of a disaster—yet they may have mentally "checked the box" and consider themselves to be prepared. A recent survey for the American Red Cross (ARC, 2007) found that having a kit is the action that is most consistent with citizens reporting being prepared. In fact, in response to the question—"Have you done any of the following actions to prepare in the event of an emergency or disaster situation?"—91 percent of those who put together a disaster supplies kit also reported being prepared for a disaster. These data suggest that after citizens feel they have prepared a disaster supply kit, they may be more inclined to consider

themselves prepared for an emergency, even though their disaster supply kit may not be sufficient. Furthermore, individuals may not have performed other recommended preparedness behaviors such as creating a disaster plan, completing first aid/CPR training, learning their school or workplace emergency plan, or learning the critical immediate actions for specific hazards.

Going beyond kit and plan: What other preparedness measures are being explored?
Past surveys have gauged citizen preparedness by focusing their questions on having a kit and a plan. More recent studies have expanded their questioning to understand other important measures of citizens' ability to respond to an emergency or disaster. Table 3 provides a summary of these studies and the questions used to explore these areas.

Table 3: Going Beyond Kit and Plan

Preparedness Measure	Survey Findings
Taken first aid and CPR training	• 48% have completed first aid or CPR training in the past 3 years (ARC, 2007) • 63% of respondents said that they have taken first aid training such as CPR in the past 5 years (CEG, 2006)
Formed and *practiced* an emergency plan	• 26% of respondents have practiced or drilled on what to do in an emergency at home (CEG, 2006) • 13% reported practicing their home emergency plan, while 30% report that they have partially practiced their plan, but maybe not enough (APHA, 2007)
Compiled a smaller kit or "go bag" to be used during an evacuation	• 36% reported having a small (portable) kit (CEG, 2006) • 24% have a small emergency kit for car travel; 46% have partially compiled a car kit, but maybe not enough (APHA, 2007)
Designated a contact person outside of their area to be contacted	• 28% of respondents have selected a person who lives outside their geographic area that all family members know how to contact if they become separated during and after an emergency (ARC, 2007) • 58% of those who have a communication plan (29% report having a communication plan) that includes a specific person living outside their community that everyone in the family knows to contact in case they become separated (CEG, 2006)
Assigned a specific meeting place	• 21% reported establishing a specific meeting place for the family to reunite in the event they could not return home or were evacuated (CEG, 2006) • 13% have set a meeting place if family can't go home; 27% have partially set a meeting place, but maybe not enough (APHA, 2007) • 24% have established a specific meeting place to reunite in the event they cannot return home (ARC, 2007)
Volunteered for emergency preparedness organizations	• 15% reported that they have volunteered to help prepare for or respond to a major emergency (CEG, 2006)

Why are people failing to become prepared?

CPR Issue 4 discussed how barriers and motivators to citizen preparedness need to be explored in greater detail, taking into account the demographic and contextual factors that often make a difference in citizen preparedness. While continuing to note frequently cited barriers, several studies have also uncovered additional potentially important barriers that must be considered. As with prior surveys, barriers measured include cost, time, lack of knowledge of what to do, or lack of concern. New potential barriers identified include lack of confidence that the recommended actions will work or make a difference (response efficacy), sense that the threat is not

Table 4: Barriers—Factors That Can Prevent Citizens From Becoming Prepared

Barriers	
Costs too much/ Lack of money	• 62% of the public cite money as a minor or major reason why they have e when asked to choose the major reason why they have not prepared (CEG, 2006) • 16% say that it costs too much money to prepare when asked to choose the major reason why they have not prepared (CEG, 2006)
Lack of time	• 18% cite time as a major constraint for becoming prepared (CEG, 2006) • 26% say they have not had enough time to assemble the items necessary to prepare for disasters, which has not decreased at all from 2006 (NCDP, 2006; NCDP, 2007) • 37% of the public say that time is a minor or major reason why they have not become fully prepared for a public health crisis (APHA, 2007)
Lack of knowledge	• 21% cite the lack of adequate knowledge regarding how to prepare (CEG, 2006) • 44% of the public cite lack of knowledge as a minor or major reason for not preparing (APHA, 2007) • 21% of respondents said they do not know what to do to achieve basic preparedness (NCDP, 2007)
Have not thought about it Not worried/concerned	• 45% have not put any thought into disaster preparedness (CEG, 2006) • 58% of respondents are not very concerned or not concerned at all about future terrorist attacks in their community; 46% of respondents are not very concerned or not concerned at all about a natural disaster or emergency weather event in their community (NCDP, 2006)
Response Efficacy	• 25% say that nothing they do to prepare will make a difference (CEG, 2006)
Confidence in government response	• 54% of the American public believes that the Federal Government can protect their community from a terrorist attack, up from 44% in 2006 (NCDP, 2007)
Won't happen to me/my family Not important/likely	• 34% believe that they are not likely to be affected by a disaster (CEG, 2006) • 58% of the public do not think a public health crisis is likely (APHA, 2007)
Believe already prepared	• 27% of the public views themselves as very well prepared or fairly well prepared, but just half (13%) meet the 3-day standard (APHA, 2007) • 3% of respondents say they do not have a family emergency preparedness plan because they already feel prepared, which is the same result in 2007 as in 2006 (NCDP, 2006; NCDP, 2007)

urgent enough (perceived severity), and, as discussed on the previous page, the belief that they are already prepared. Barriers related to evacuation were also identified but will be discussed in greater detail in a later section. Table 4 summarizes these types of potential barrier being examined.

Overall, Table 4 reveals the multiple barriers individuals perceive that prevent their all-hazards, comprehensive preparedness. These barriers must be addressed and overcome in order to motivate people to prepare for disasters. It is important for preparedness communicators to design messages that offer citizens alternative arguments (also known as counter-arguments) to these barriers. To this point, the APHA (2007) survey reported that—

"Providing easily accessible, user-friendly information about steps to take to become prepared as well as the cost and time associated with completing those steps will help address financial and time concerns, barriers related to thinking that a public health crisis is very unlikely to occur or simply not thinking about it at all, and lack of knowledge about what to do to become prepared." (p. 16)

Preparedness messages should be structured to stress the alternatives as well as to address potential motivation factors.

What factors affect an individual's level of preparedness?

Surveys are also exploring demographic and other contextual characteristics of the population that have been shown to make

Table 5: "It depends…"—Factors That Affect a Citizen's Level of Preparedness

Demographic Factors	
Age	• The age group reporting overall higher levels of personal preparedness is 45–54, followed by 55–64 and 35–44. The least prepared age group 18–24 (CEG, 2006; CEG/ARC, 2007)
Race/Ethnicity	• 73% of African Americans are concerned about the possibility of a natural disaster or emergency weather event in their community, compared with 58% for Latinos and 50% for Whites (NCDP, 2006) • On an overall disaster preparedness scale, African Americans rate as the most prepared race followed by Whites and Hispanics (CEG, 2006)
Employment	• Full-time employees report higher levels of personal preparedness, followed by part-time and self-employed workers (CEG, 2006) • Knowledge and practice of workplace preparedness plans increase an individual's overall preparedness (CEG, 2006;CEG/ARC, 2007)
Income	• Individuals with higher incomes are less likely to cite cost as a barrier to preparedness and are more likely to report that they are very or fairly prepared for a public health crisis (APHA, 2007) • The more an individual makes, the higher their reported level of preparedness (CEG, 2006) • Low-income Americans (54%) are less likely to report being prepared for a disaster, compared with higher-income Americans (61%); low-income Americans (42%) are also less likely to have taken first aid or CPR training compared with higher-income Americans (53%) (ARC, 2007) • Among households with the lowest incomes, there is a disconnect between individuals' relatively high perceived risk of experiencing a disaster and their low level of personal preparedness; individuals from low-income groups report greater fatalism and dependency on emergency personnel, lower sense of self-efficacy, and less training (NCDP, 2007)
Education	• The more educated one is, the higher their reported levels of preparedness (CEG, 2006)

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Contextual Factors	
School	• Parents were better prepared if their children's schools or daycare had emergency response plans) and provided written information about those plans (CEG/ARC, 2007)
Parents with young children	• 49% report being prepared because they would be responsible for children during a disaster (CEG, 2006)
Regional Location	• Miami (73%) and San Francisco (55%) residents are more likely to have a disaster supply kit; only 32% of Chicagoans and 40% of New Yorkers report having a disaster supply kit, which are below the national norm (42%) (CEG, 2006) • Residents of Louisiana and Mississippi are more prepared for a natural disaster than is typical (68% vs. 57% overall; NCDP, 2006) • Hurricane-prone States are more likely to report being prepared or very prepared for a disaster (62% vs. 57% in the rest of the States) (ARC, 2007) • 61% of San Francisco and 62% of Miami residents cite living in a high-risk area as a major reason for being prepared for a disaster (CEG, 2006) • Southerners are far more likely to report a risk of a major weather event (6.3%) than Westerners, but Westerners are more likely to report threat of wildfire (5.4%) or a major geological event, such as an earthquake or mudslide (5.3%); Easterners are more likely to report a threat of a nuclear explosion (3.4%) than are residents of the Central U.S. (2.5%) (NCDP, 2007)
Prior emergency/ disaster experience	• 29% say that the major reason why they are prepared is because they have been through an emergency before (CEG, 2006)

a difference in how prepared people report that they are for a disaster. Several mediating factors to becoming prepared have been studied and are summarized in Table 5.

As shown in the table above, certain demographic and contextual factors can make a difference in disaster preparations. For example, data from the CEG (2006) and CEG/ARC (2007) surveys show that knowledge and practice of workplace preparedness plans and having school-aged children correlates highly with individual and family preparedness. Future research should continue to explore these mediating factors. Better targeted messages and outreach activities can then be used to ensure citizens have the most appropriate information and support that they need to make informed choices for preparing for disasters.

Does where people live make a difference?

Surveys that sample specific regions show important variations from national studies. For instance, the NCDP (2006) conducted a national telephone survey and compared data from different regions in the Gulf Coast area. The survey found that 1 year after Hurricane Katrina, 78 percent of Louisiana and Mississippi residents were concerned that there would be another disaster or emergency weather event in their community, compared with 54 percent nationally. In addition, residents of these States self-reported that they were more prepared for a natural disaster (68%) than were residents in the national sample (57%).

The CEG survey conducted in 2006 included both a national sample as well as

additional surveys conducted in four major metropolitan areas: Chicago, Miami/Dade County, New York City, and San Francisco. Important regional differences related to specific questions are summarized in Table 6.

The American Red Cross conducted a national online disaster preparedness survey

Table 6: Council for Excellence in Government, 2006

KIT: Prepared a disaster supply kit with emergency supplies like water, food, and medicine that is kept in a designated place in your home?	
Miami	73%
San Francisco	55%
Nation	42%
New York	40%
Chicago	32%

PLAN: Made a specific plan for how you and your family would communicate in an emergency if you were separated?	
Miami	34%
New York	34%
San Francisco	30%
Nation	29%
Chicago	20%

(ARC, 2007) that analyzed the difference in preparedness measures of all respondents compared to those respondents living in hurricane-prone States (i.e., all coastal States from Texas to Maine). This survey found that, while individuals in the hurricane-prone States were more likely to do many of the recommended measures (i.e., have a kit, evacuation plan, emergency contact outside the area, and a disaster plan for pets), 2 out of 3 did not have a disaster supplies kit and 6 out of 10 did not have an evacuation plan. When the same data was analyzed on a regional basis (i.e., East, Midwest, South, West), individuals seemed to be most prepared for the types of incidents they had experienced in the past. Based on previous experience, respondents from the West were most likely to report being very prepared for a long-term power outage or a disaster by having food and water for 3 days, whereas respondents from the South were most likely to report having a specific plan for evacuation and an emergency contact outside their area. This data indicates that individuals tend to prepare for the natural disasters to which they feel most vulnerable.

However, while the data discussed above indicates that an individual's sense of vulnerability to local hazards can impact the extent and type of preparedness actions they take, other studies show that significant differences can exist within a single region where respondents would be vulnerable to similar hazards. For example, the Survey and Policy Research Institute at San Jose

> "Surveys that sample specific regions show important variations."

> Studies show that more than half of all respondents would not leave or would wait until concerns were addressed before heeding a call to evacuate.

State University in California conducted a survey in 2006 that compared levels of preparedness in six communities in California (Bay Area, Los Angeles, other counties of southern California, counties in the Central Valley, central coast counties, and counties in rural California). Results show that residents of rural California are most likely to report being "well prepared" (32%), while residents in the Bay Area are least likely to report being "well prepared" (14%). Residents in the Central Valley are most likely to report being "not prepared at all" (27%). This data indicates that other motivations and barriers exist that can cause different levels of preparedness to occur even within a single geographic region. Understanding regional and community-level differences in preparedness will be important in developing effective strategies that address the needs of the community.

Results show that rural California is the region most likely to report being "well prepared" (32%), while residents in the Bay Area are least likely to report being "well prepared" (14%). Residents in the central valley are the most likely to report being "not prepared at all" (27%). Clearly, there are important differences to be considered based on location. Understanding regional differences in preparedness can be used to develop regional or community-specific strategies. Strategies may be based on a location's vulnerability to specific disasters or focus on specific aspects of disaster preparedness (e.g., if data indicates that individuals in an area are relatively well prepared in stockpiling food and water, then communications and outreach may focus on other aspects of becoming prepared for disasters).

Are individuals with disabilities becoming more prepared for disasters?
CPR Issue 2 addressed how the events of Hurricane Katrina brought to the public's attention the problems that those with disabilities and chronic health conditions face in times of disasters. Since that CPR was published, several important studies have been released that continue to explore the issues that people with disabilities face when preparing for disasters. For example, the APHA (2007) survey included questions designed to understand the level of preparedness of those with chronic health conditions. Of those surveyed, 61 percent of people with chronic heath conditions have at least a 2-week supply of medications, compared with 49 percent of the general public. However, there was no difference in terms of their responses to being prepared overall for an emergency (26% chronic condition vs. 27% national). Similarly, a survey for the ARC (2007) found that 58 percent of individuals with a disability report that they are prepared or very prepared for a long-term power outage or a disaster, the same as for other respondents. While more individuals with disabilities report having supplies of medications and similar levels of preparedness with the general public, this is not sufficient given their potentially increased vulnerability in the event of a disaster.

Table 7: Sample Evacuation Questions—2005–2007

Sponsoring Organization	Question		2005	2006	2007
National Center for Disaster Preparedness (NCDP) (National)	If ordered to evacuate and go to a distant location, would you…	Leave immediately		44%	46%
		Wait until concerns about children or loved ones were addressed		44%	43%
		Not leave		12%	11%
Council for Excellence in Government (CEG) (National)	If you were instructed by your governor or mayor to evacuate to outside of the metropolitan area, would you have…	No place to stay, no transportation		10%	
		Have a place to stay and transportation		68%	
		Transportation but no place to stay		14%	
		Have a place to stay but no transportation		5%	
American Red Cross (ARC) (National)	Have you done any of the following actions to prepare in the event of an emergency disaster situation (e.g., made a specific evacuation plan)?				36%
American Public Health Association (APHA) (National)	The following is a list of things that public health experts recommend people do to prepare for an emergency situation. Indicate whether you have actually done it, have considered doing it, or have not considered doing it (e.g., home evacuation plan).	Have done this			18%
		Have partially done, but maybe not enough			42%

Are individuals prepared and willing to evacuate?

A new focus that has emerged in preparedness surveys in the past year and half is the exploration of issues surrounding evacuation. Several of the surveys reviewed for this CPR explored issues surrounding evacuating during a disaster. Table 7 provides sample questions related to evacuation and findings.

Overall, these surveys identify several issues related to preparedness for evacuation: familiarity with community evacuation plans, concerns relating to children or loved ones, knowing where to go during an evacuation, and transportation issues. These studies show that more than half of all respondents would not leave or would wait until concerns were addressed before heeding a call to evacuate, and only one in three have made an evacuation plan for use in the event of a disaster situation.

> **Only one-third of people with pets had a plan in place... but would still bring their pet.**

What are the barriers specifically related to evacuation?

Several studies explored the barriers that keep individuals from evacuating during an emergency. In NCDP's 2006 survey, 92 percent of Americans have at least one reason why they would not evacuate immediately if ordered to do so, a measure unchanged from the 2005 survey. The most common reasons provided included the need to ensure the safety of dependent family members: children (48%), elderly (47%), disabled (45%), and pets (34%). Twenty-nine percent cited transportation as a reason, virtually identical to 2005 (30%). In a 2006 survey by the Harvard School of Public Health (HSPH) of individuals in high-risk areas for hurricanes (counties in Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, and North Carolina within 50 miles of the coastline) it is indicated that one-third (33%) of residents said if government officials said they had to evacuate due to a major hurricane this season, they would not or are unsure if they would leave. The top reasons people gave for not evacuating included that their homes are well-built and they would be safe there (68%), the roads would be too crowded (54%) and that evacuating would be dangerous (36%). Of concern is that 66 percent of all respondents, and that 75 percent of those respondents that had indicated that they did not intend to evacuate, are confident that they would be rescued if they were unable to evacuate and needed help.

Several surveys explored the issues of trust of emergency officials. CEG (2006) measured how much various sources are trusted by the American public. When respondents were asked to give their opinions on who gives the most accurate and reliable information

Table 8: Evacuation and Pets—ARC, 2007

Question	Response
Number of households with pets	59%
Plan in place for pet(s) in case of a disaster	37%
Would leave pet behind if told to evacuate	7%
Would bring pet along if ordered to evacuate, regardless if they are accepted in hotels	84%
Would not comply with evacuation order and stay at home with their pet	4%
Households with children were most likely to expect to leave pets behind in an evacuation	11%

during a disaster, responses ranged from: 45 percent news media, 33 percent police/fire chief, 8 percent mayor, 5 percent emergency management, 5 percent family and friends, and 5 percent no one. For guidance specifically on an evacuation, 46 percent say they would most likely follow the instructions of a police or fire chief, 21 percent news, and 14 percent mayor. In NCDP's 2007 survey, 37 percent of respondents indicated that they would not leave because of lack of confidence in who was ordering them to leave.

Pets are another area of concern when planning for and encouraging individuals to evacuate. ARC (2007) included a section with a special focus on evacuation and pets. The data indicate that while most would follow evacuation orders, only one-third of people with pets had a plan in place for their pet in the event of a disaster, but would still bring their pet along with them.

From survey results it is clear, there are many dimensions related to individual evacuation preparedness that must be explored and taken into account in order to effectively encourage individuals to plan for and respond to an evacuation order. Individuals must be encouraged to create plans that will account for their families and pets. Government officials must communicate their strategies for overcoming some of the logistical issues related to evacuation (traffic jams, security issues) as well as issues of trust when communicating evacuation orders.

IN SUMMARY

While research does not show significant progress in several important aspects of personal disaster preparedness, new developments in research allow for a better understanding of preparedness challenges.

Understanding barriers and potential motivators to overcoming those barriers can help to further preparedness initiatives. Additionally, research on what characterizes different segments of the population in terms of preparedness creates increased understanding of how to target messages toward specific demographics and other contextual factors. Research on specific actions such as evacuation provides critical insight for government officials to improve planning and communication. Research efforts are beginning to identify the necessary pieces to the citizen preparedness puzzle. With new information on barriers, characteristics, and perceptions, we are better positioned to understand how to motivate citizens to undertake disaster preparedness.

A LOOK AHEAD

Future CPRs will continue to explore measures of individual preparedness as well as barriers and motivators to preparedness. Macro International Inc. has also recently completed fielding of the 2007 Citizen Corps Household Survey. This national and regional household survey will deepen our understanding of the multiple, variable dimensions of preparedness identified here and in the Citizen Corps Personal Behavior Change Model for Disaster Preparedness.

We hope that the availability and analysis of these CPRs will inspire organizations to assist in our efforts to present the broadest scope of research in the critical field of citizen preparedness. If you are aware of survey research that meets the stated criteria please contact Citizen Corps at citizencorps@dhs.gov. Also, please be sure to read the CPRs available on the Citizen Corps Web site at http://www.citizencorps.gov/ready/research.shtm.

> "With new information on barriers, characteristics, and perceptions, we are better positioned to understand how to motivate citizens to undertake disaster preparedness."

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