

## SUMMARY OF SURVEY PRELIMINARY FINDINGS

**Alice Hausman, PhD, MPH**  
**Brenda Seals, PhD, MPH**

### INTRODUCTION

The events of September 11, 2001 set off an effort to create a national emergency response system to improve states' readiness for disasters, both man-made and natural. The emphasis of the effort has been on the coordination of traditional emergency responders, such as police, fire, emergency medicine, Coast Guard, and National Guard. Yet, the recent flooding disaster in the Gulf Coast underscores the need to include the public in emergency planning and system development. A few studies have suggested this but the catastrophic failure of the emergency response system in the wake of Hurricane Katrina reinforces the need to better understand the public's concerns. In order to develop effective action strategies, state and local emergency response agencies must better understand what people's concerns are, what they need to know, and how best to communicate important information before, during, and after disasters.

This report summarizes results from a statewide random digit dialed survey conducted September – November 2004 that assessed Pennsylvanian's concerns about disasters and attitudes towards preparedness. As part of a larger quality of life survey, respondents were asked to report their fears and concerns regarding emergencies, awareness of and feelings towards national preparedness strategies, current level of preparedness for emergencies, and preferred communication channels in times of emergency. Previous exposure to both natural and terrorist events was assessed, and measures of psychological distress, including general anxiety and post-traumatic stress syndrome were also made. This report presents descriptive information only; later reports will present multivariate studies.

**The Pennsylvania Quality of Life Survey (PQLS)** presented here was designed to capture baseline concerns about disasters among PA residents and their current status of preparedness at the household level. The survey also addressed public opinion about the need for preparation and public safety policies that are in place. Personal characteristics, such as race, gender, age, income, and education were also investigated in their role in affecting preparation or the lack thereof. While the survey samples only one state and may not be representative of the entire county, because Pennsylvania has been exposed to both natural and perpetrated disasters, it offers a unique opportunity to assess people's concerns regarding preparedness.

### METHODS

The data presented here are derived from an annual random digit dialing (RDD) survey conducted in fall, 2004 by Temple University's Metropolitan Philadelphia Indicators Project and its Institute for Survey Research. This survey is supported by Temple University, the William Penn Foundation, and for 2004, additional support was provided by the Pennsylvania Department of Health. The survey is representative of heads of households aged 18 or older in the Philadelphia metropolitan area and is designed to assess perceptions of quality of life on a wide variety of topics, including community life, neighboring, civic participation, public

services and taxes, local schools, arts and culture, and crime and safety. The Pennsylvania Life Survey augments the Pennsylvania side of the metropolitan area with an additional target sample size of 700 household interviews for the remainder of the state. The county where Flight 93 fell was oversampled to ensure capture of that event. The results presented here are based on 1516 completed interviews with heads of households across the state of Pennsylvania. All interviews are conducted with Computer Assisted Telephone Interviewing (CATI). The response rate for the survey was .21; while the rate is quite low, it reflects the rapid decline in RDD response rates over the past decade acknowledged in the literature (Curtin et al. 2005; McGuckin, et al. 2003; Newport 2003; Sawtooth 1999; Smith 1994; Survey Research Laboratory 1999). In addition, extensive analyses have failed to produce indications of bias. This response rate falls in the middle of the range of six alternative response rates which considers acceptable to report and was calculated using industry standards issued by the American Association for Public Opinion Research.

To improve the precision of estimates for the sample, this paper uses two kinds of weights: sampling and post-stratification. A sampling weight was applied to households with multiple phone lines: households with multiple lines were weighted by 0.5. Post-stratification weights to adjust for gender, race (2 groups: white vs. non-white), age (3 groups: 18-44, 45-64, and 65+), and education (2 groups: high school or less vs. more than high school) were calculated from census data. Sample weights also applied to adjust for oversampling of the Philadelphia metropolitan area and Somerset County. The data reported here reflect all adjustments but have not been through the finally stage where the sample is projected to reflect the population of Pennsylvania. This next step is critical for estimation of rates. However, the percentages and averages presented here may be considered accurate reflections of relative frequencies and average of sentiments. The study received human subjects approval by Temple University's Internal Review Board.

## **Questionnaire**

The core survey that is done every year includes questions on residential history, public services and transportation, government and taxes, schools, community participation and involvement, neighborhood and neighboring, housing and residential mobility, safety, and employment. Variables such as race, age, sex, income, education and other descriptive demographics are also measured. For the 2004 survey, a set of questions regarding concerns, attitudes, and practices regarding emergency preparedness, as well as exposure to disasters and an assessment of generalized anxiety, were also included. The preparedness questions were informed by recent national surveys on the topic and developed in partnership with the Pennsylvania Departments of Health and Public Welfare. Our measures of generalized anxiety and PTSD are modified from a scale developed by Derogatis (1993). In total, the survey averaged approximately 35 minutes in length. A copy of the 2004 questionnaire and other technical reports can be viewed at <http://www.temple.edu/mpip>.

Most item responses form a Likert scale; some are dichotomous. Some measures were derived by combining a series of items. For example, a summary of preparedness status was derived by determining how many of the nine possible things people could do to be prepared responding households had actually done or purchased to be prepared for emergencies. Similarly, a summary concern measure was constructed by averaging the responses over the series of questions about concerns for each individual.

Some results were compared across Health Districts. Because there were few if any statistically significant results across Health Districts, results are mostly presented for the state as a whole.

## RESULTS

### Exposure to Disasters

Respondents were asked if they or someone they knew had been personally affected by a natural disaster such as a flood or tornado in the past two years. Respondents were also asked if they or someone they knew was killed or injured in any of the terrorism attacks on 9/11, or was exposed to anthrax in the mail. Across the state, 41% reported direct or indirect exposure to a natural disaster, and 10.5% reported knowing someone affected by the 9-11 events. Only .8% reported any exposure to anthrax powder.

**Chart 1:** Percentages across state regions of people who reported exposure to natural disasters (floods or tornados) or the events of 9/11/01 (not including anthrax).

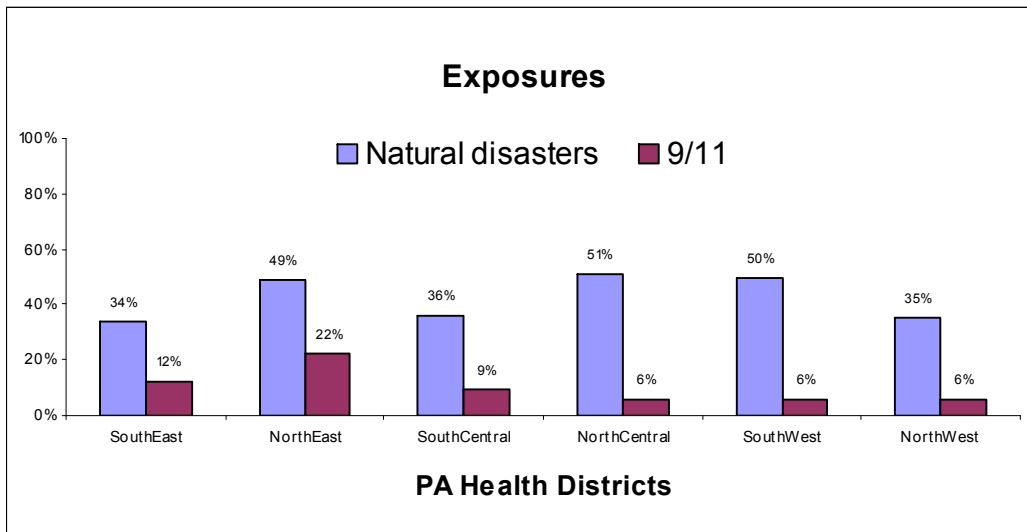


Chart 1 shows the results of the exposure questions by the different health districts that reflect different geographic areas of the state. The higher exposures to terrorism events are in the Southeastern region which includes Philadelphia, and the Northeast which includes bedroom communities for New York City. These reports of exposure to the 9/11 events in these regions are not surprising given the close connection of these two regions with the financial districts of New York City. The crash of Flight 93 was in the Southwest district, but reporting of exposure to terrorism events is low. Exposure to natural disasters was much higher, as would be expected. We did not ask people to specify the type of natural disaster they had some exposure to, but Pennsylvania is the most frequently flooded state in the US and also experiences devastating tornadoes.

### Concerns regarding Terrorism and Natural Disasters

We asked people to rate how concerned they were that particular disaster events will happen in their communities in the next two years, with 1 being Not at all concerned and 4 being Very concerned. On average, respondents were less than somewhat concerned that a terrorist event or natural disaster would affect their communities within the next two years. Generally, people reported similar concern of a natural disaster occurring as for a terrorist event: average scores were about 2.5, between not very concerned and somewhat concerned. Yet, when specific events are considered individually, more than one third of the respondents were concerned or very concerned that any of these events would happen locally within two years (Table 1).

**Table 1:** Percent respondents who reported being Very or Somewhat concerned that any of the specific events would affect their community within the next two years.

Event	PQLS Survey 2004
Receiving mail that has anthrax or some type of poison on or in it.	32 %
Exposure to smallpox or some other deadly infectious disease	40%
Exposure to a toxic chemical.	48%
A hijacking of an airplane or other public transportation	52%
Intentional contamination of the water or food supply	54%
A bombing	50%
Exposure to radiation	49%
Tornados touching down	48%
Massive flooding in your neighborhood	44%

The PQLS survey found that the highest percentage of concern was for intentional contamination of food or water. While Pennsylvanians have experienced contamination of water through floods and food imports, intentional contamination of the food supply has not happened near Pennsylvania. The one event in the Pacific Northwest within the last few years did not receive much press. At the same time, the lowest percentage of somewhat or very concerned was for exposure to anthrax in the mail. This event did in fact happen very close by in New Jersey and New York, and received enormous press attention.

### General Anxiety and PTSD

General Anxiety was measured by 10 items with responses ranging from 0 (not at all) to 4 (quite a bit). The average General Anxiety score across the state was .44 (standard error: .018), indicating a low level of general anxiety across the state.

PTSD was measured as present if a responded acknowledged the presence of at least 5 out of 17 symptoms. Using this definition, PTSD was measured as present in 8.7% of the sample. The National Center for PTSD reports that the lifetime prevalence of PTSD among American adults is 7.8% ([http://www.ncptsd.va.gov/facts/general/fs\\_epidemiological.html](http://www.ncptsd.va.gov/facts/general/fs_epidemiological.html); accessed 9/27/05)

Interpretation of these mental health measures must be extremely cautious in part because these measures may be more sensitive to the projection adjustment to the state population. Additionally, the significance of these findings will be more evident as we conduct multivariate studies.

### Confidence in Preparation

The survey asked about people’s confidence in their own preparation and in their government’s ability to provide needed services in times of disaster.

**Table 2:** Responses to questions on confidence in preparation.

	Very confident	Somewhat confident	Not very confident	Not at all confident
How confident are you that you are prepared for a natural disaster or terrorism event?	18.8%	52.6%	21.5%	7.1%
How confident are you in your government’s ability to provide you with needed services or information?	19.8%	53.9%	18.7%	7.5%

Most respondents, about 72%, were very or somewhat confident that they were prepared for a disaster event. However, over one quarter were not confident in their preparedness. As the RWJF survey showed, a large majority were confident in their government’s ability to provide them with services or information in an emergency event. Yet, at least one quarter were not confident and this number has been stable over time, indicating that more could be done. Certainly, in light of the recent devastation of Hurricane Katrina, the need for strong confidence and trust in government agencies is an important component of response and recovery.

**Actual Preparedness**

Even though people feel fairly confident about their own preparation, they actually haven’t done that much to be prepared. Respondents were asked if they had done any of 9 different things to prepare for emergencies. Responses to individual items are presented in Table 3.

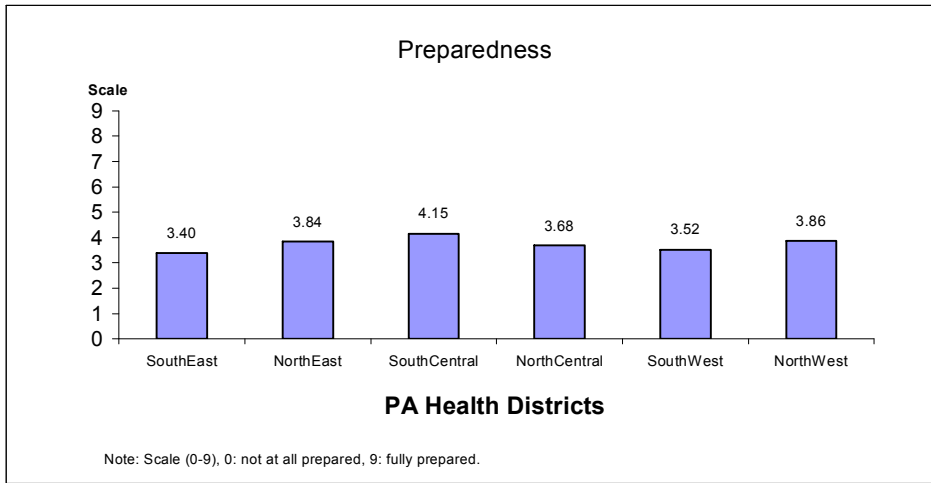
**Table 3:** Percentages who responded that their household had purchased an item or conducted an activity specifically to prepare for a disaster.

Activity	% who said yes
Purchased or prepared a first aid kit	44%
Purchased or set aside a store of batteries	60%
Purchased a battery-powered radio	56%
Purchased a battery-powered TV	11%
Purchased duct tape and plastic	29%
Arranged a meeting place in the event of an emergency	31.3%
Located a shelter that you can go to	31%
Purchased extra food and water	43%
Safely stored important documents	58.5%

As Table 3 shows, a majority of households had purchased batteries and had a battery powered radio. Yet, far fewer had done any planning, like arranged a meeting place or located a shelter. All in all, most of the preparedness actions taken were in purchasing items. About 64% had purchased two or more items for preparation. However, only 31% had made family plans for action during an emergency. Experts say that making a family plan is the most important thing to do to prepare for emergencies. Interestingly, 29% had purchased duct tape and plastic. There has been controversy over whether or not this is good practice, and clearly there have been mixed messages. Similar to our results, the Red Cross survey found that 42% of Americans had done at least one preparatory activity involved in putting together a disaster kit and only 32% had made a family plan.

Overall, Pennsylvanians had done only 3 to 4 out of the 9 possible actions to be prepared. Chart 2 shows the average preparedness across Health Districts.

Chart 2: Average preparedness across Health Districts.



**Feelings about Preparedness**

A series of questions assessed people’s attitudes towards new policies and recommended procedures for homeland security.

**Table 4:** Responses to questions about preparedness attitudes:

	Not at all important	Not very Important	Somewhat Important	Very Important	DK	Total
<b>How important do you think it is that the public is aware of doing these things to prepare of a natural disaster or terrorism event?</b>	2.0%	7.1%	37.9%	53.0%		100%
	Strongly disagree	Disagree	Agree	Strongly agree	DK	Total
<b>I would benefit from creating emergency plans.</b>	2.0%	8.2%	63.9%	25.7%	.2%	100%
<b>I feel safer in my community because of new Homeland Security Laws.</b>	9.8%	29.6%	48.5%	10.2%	1.8%	100%
<b>I feel safer now that the changes in security procedures are in place.</b>	6.6%	20.7%	56.8%	15.4%	.5%	100%
<b>I am concerned about losing some of my privacy rights.</b>	11.7%	39.4%	34.4%	13.1%	1.4%	100%

Table 4 shows that there is not a consensus regarding the value of preparedness. While the large majority thought it was very important that people be aware of how to be prepared, a lesser majority felt strongly that there was benefit from creating emergency plans. Our findings show there is even greater variability across how people feel about Homeland Security laws and changes in security procedures, with between 25% and 35% disagreeing with statements about increased safety. Importantly, 47% of the respondents expressed concerns about losing privacy rights as a result of new security policies and procedures. Further research will show the extent to which these concerns interfere with household preparation and the degree to which marketing campaigns should specifically address these concerns. Yet, the New Orleans Katrina example validates the finding of distrust and lack of willingness of some segments of the population to follow procedures.

## Awareness of Preparedness Resources and Activities

We asked about people’s knowledge of a variety of state and national activities designed to increase both regional and household preparedness.

**Table 5:** Responses to questions about preparedness resources and activities.

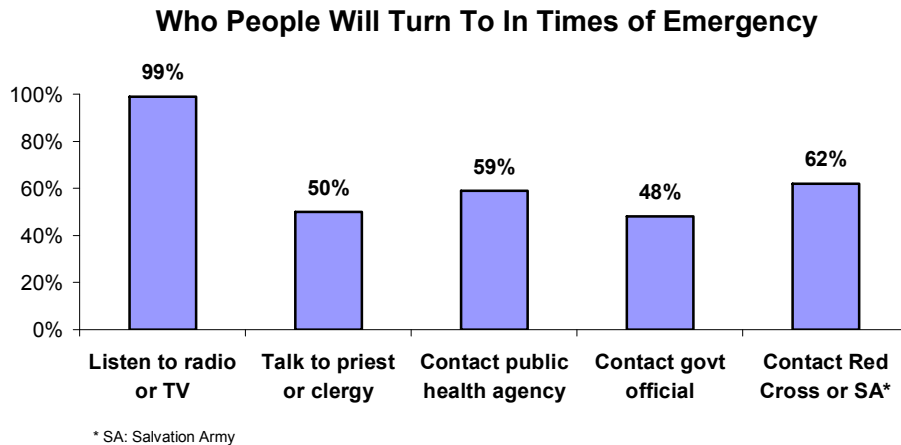
	No	Yes
Are you aware that extra supplies of medicine and vaccines are being made available in case of terrorism emergencies?	46%	54%
Are you aware that doctors, nurses and other medical professionals are being specially trained to handle terrorism emergencies?	37%	63%
Are you aware that public health workers are being specially trained to handle terrorism emergencies?	38%	62%
Do you know where you can get professional help with anxiety and stress after an event occurs?	27%	73%
Are you aware of (the PA Preparedness Guide) an information booklet?	74%	26%

As Table 5 shows, 73% of respondents said they knew where to get professional help with anxiety and stress after an emergency event occurs, which compares favorably with the Widmyer study where in 2003, only 55% of respondents in the North East region knew where to get help with mental distress after a disaster. Overall, the majority were aware of national level efforts to improve capacity for disaster events. On the other hand, relatively few were aware of the state’s efforts to increase household preparation.

## Preferred Communication Channels

The survey asked respondents who they would turn to in times of emergency. Chart 3 demonstrates that mass media channels are almost universally relied upon. The finding that 50% would seek out their clergy indicates the role that non-traditional providers play in emergency response.

**Chart 3:**



## DISCUSSION

### Study Limitations

Random digit dialed surveys are inherently limited by the lower response rates engendered by caller id, limits to the number of call backs considered ethical, and the inherent biases of the respondent sample. The weights applied to balance the sample help to overcome much of this bias.

## Key Findings

The Pennsylvania Quality of Life Survey yielded results that are informative for both local and national preparedness efforts. Key points are listed here:

- While people are generally confident in their household's preparation, there is a general lack of actual preparation actions among households.
- People were generally unaware of Pennsylvania's efforts to educate citizens about "sheltering in place", although national efforts to improve preparedness were better known.
- A large percentage of Pennsylvanians do know where to get help with anxiety after a disaster.
- There is a considerable proportion of the population that is not fully comfortable with national policies about preparedness and homeland security.
- The mental health aspects of disasters, both experienced and feared, clearly play a role in preparation. While we cannot say which came first, concern about future disaster events or previous experience with disasters, these concerns need to be addressed even if the risk seems low.
- People will turn to non-traditional providers, such as clergy, for assistance with disaster related trauma, indicating that efforts should be made to develop preparedness capacity in these arenas.

## References

Curtin, R., Presser, S. & Singer, E. (2005). Changes in Telephone Survey Nonresponse over the Past Quarter Century. *Public Opinion Quarterly* 69: 87-98.

Derogatis, LR (1993). Brief Symptom Inventory: Administration, scoring & procedures manual. National Computer Systems, Inc., Minneapolis, MN.

McGuckin, N.; Keyes, M.A. & Liss, S. (2003). Hang-ups: looking at non-response in telephone surveys. U.S Department of Transportation. Retrieved September 27, 2005 from [www.fhwa.dot.gov/ohim/hang\\_ups.htm](http://www.fhwa.dot.gov/ohim/hang_ups.htm)

National Center for PTSD: [http://www.ncptsd.va.gov/facts/general/fs\\_epidemiological.html](http://www.ncptsd.va.gov/facts/general/fs_epidemiological.html); accessed 9/27/05)

Newport, F. (2003). Looking closely at survey response rates. Gallup Organization Web site. Retrieved September 27, 2005 from <http://poll.gallup.com/content/default.aspx?CI=7510>

Sawtooth Technologies. (1999). Respondent cooperation audit. Retrieved September 27, 2005 from [www.sawtooth.com/news/sawtoothnews/newsarch/respcoop.htm](http://www.sawtooth.com/news/sawtoothnews/newsarch/respcoop.htm)

Smith, T.W. (1994). Trends in non-response rates. Paper presented to the 5th International Workshop on Household Survey Research, Ottawa, Canada, September 1994.

Survey Research Laboratory at the University of Illinois at Chicago. (2000). An inquiry into declining RDD response rates: Part IV: lack of standardization." *Newsletter*. 31: 1-3.

Widemyer Communications. (2004). Threat of terrorism and mental health: A public opinion poll Retrieved September 27, 2005 from <http://www.nmha.org/newsroom/system/news.vw.cfm?do=vw&rid=580>

“This project is funded, in part, under an agreement with the Pennsylvania Department of Community and Economic Development and the Pennsylvania Department of Health in coordination with the Centers for Disease Control and Prevention Cooperative Agreement on Public Health Preparedness and Response for Bioterrorism. The funding agencies specifically disclaim responsibility for any analyses, interpretations, or conclusions.”