Redefining health behaviors to include disaster preparedness.

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American Public Health Association

Session 5196

Washington, DC

November 7, 2007

Defining topic

- **Risk communication:** Information exchange about health risks caused by environmental, industrial, or agricultural, processes, policies, or products among individuals, groups, and institutions.
- **Crisis risk communication:** Accurate and effective communication to diverse audiences in emergency situations including natural disasters, industrial accidents, disease outbreaks, or bioterrorism events.

- **Glik, Deborah C. Risk Communication For Public Health Emergencies *Annual Rev Public Health*. 2007 Apr 21;28:33-54.**

Crisis risk communication - defined at household level – all hazards approach (December 2006)

- Pre-event
  - 1) family communication plan
  - 2) disaster supplies
  - 3) plan to comply with governmental edicts in face of disaster at household level (shut off gas, evacuate, shelter in place, evacuate) in a disaster
  - 4) Other structural mitigation efforts (earthquakes, hurricanes, tornadoes)
- During event
  - 1) enact family communication plan
  - 2) use disaster supplies
  - 3) compliance with governmental edicts in the face of a disaster
- After the event – mitigation and recovery
  - All of the above

Why is disaster preparedness at household level important

- Saves lives
- Reduces service utilization during disaster
- Facilitates relief or hazard mitigation efforts
- Reduces anxiety among people affected by disaster

California fires October 2007

What is current level of disaster preparedness?

- National and local surveys – only 25% to 40% of American public disaster prepared
- National Red Cross Survey 2004: 41% indicated that they had emergency supplies*
- Annual Columbia University Survey 2006: 31% of population emergency prepared **

* *From the home front to the front lines: America speaks out about homeland security* (March, 2004). Council for Excellence in Government. Research conducted by Hart-Teeter. http://www.excelgov.org/admin/FormManager/filesuploading/Homeland_Full_Report.pdf

**(National Center for Disaster Preparedness (September, 2006). http://www.ncdp.mailman.columbia.edu/files/2006_white_paper.pdf

What is current level of disaster preparedness?

- APHA 2007:

  40 % public have taken steps in the past to prepare for emergencies ***,

  Many admit to not maintaining their preparedness plans***
- Recent studies: despite Hurricane Katrina, Americans are no more disaster prepared than they were 2- 3 years ago.

*

- ***APHA www.apha.org

Annenberg National Health Communication Survey / UCLA Pre-Event Preparedness Study

- ANHCS - National repeated cross sectional survey on health, media use
- Knowledge Networks – ANHCS relied on an Internet based survey: participants get free internet access
- EPS – Emergency Preparedness Survey – follow- up monthly survey conducted with a subset of July to December ANCHS respondents 6 to 8 weeks later)

Annenberg National Health Communication Survey (ANCHS) Data

- Demographics;
- Media use, and exposure to media mentions of terrorism;
- Health behaviors;
- Perceived Threat self-reported levels of the probability of a terrorist threat “somewhere in the US” and “in your community”;
- Perceived Preparedness self-reported levels of preparedness of “you and your family” and “your local health care system”

EPS- Strategy

Preparedness

1. Encourage households to maintain a number of recommended “generic” emergency supplies

Communication Plans

2. Develop family communication and evacuation plans.

Compliance with emergency actions

3. To increase the public’s awareness and acceptance of a host of potential emergency measures such as quarantine, sheltering in place, vaccination and taking certain medications.

Emergency Preparedness Survey (EPS)

EPS ONLY

- Supplies # of 18 recommended items currently possess;
- Plans # of 6 recommended emergency family communication and evacuation plans currently have in place;
- Likelihood of specific events of 11 specific manmade and terrorist events happening somewhere in US or in own community in the next year;
- Likelihood of compliance with 6 emergency actions (evacuating their home, sheltering in place at home, sheltering in place at work, being quarantined, being vaccinated, or taking medication);
- Perceived efficacy of each of these emergency actions.

Emergency Preparedness Survey (EPS)

ITEMS ON BOTH ANCHS AND EPS

- Perceived Threat self-reported levels of the probability of a terrorist threat “somewhere in the US” and “in your community”;
- Perceived Preparedness self-reported level of preparedness of “you and your family” and “your local health care system”

Research Questions

RQ1: How prepared is the general public in terms of emergency supplies and communication and evacuation plans?

RQ2: How willing is the general public to comply with requests by authorities to take various actions during an emergency?

RQ3: What factors predict preparedness and compliance with emergency actions?

RQ4: Are people who are disaster prepared also more likely to practice other health related behaviors?

ANHCS - EPS add on : sample size

- August - 211
- September - 286
- October - 331
- November - 281
- December - 228
- January – 292

- Total sample size - 1629

ANHCS - EPS add on : sample characteristics

- Mean age – 47.5 years (SD 16.6)
  - < 34 = 25.29%
  - 35- 64 = 57.65%
  - >65 = 17.06
- Education
  - < HS = 12.89%
  - HS = 31.12%
  - Some coll = 25.97%
  - Coll + = 30.02%

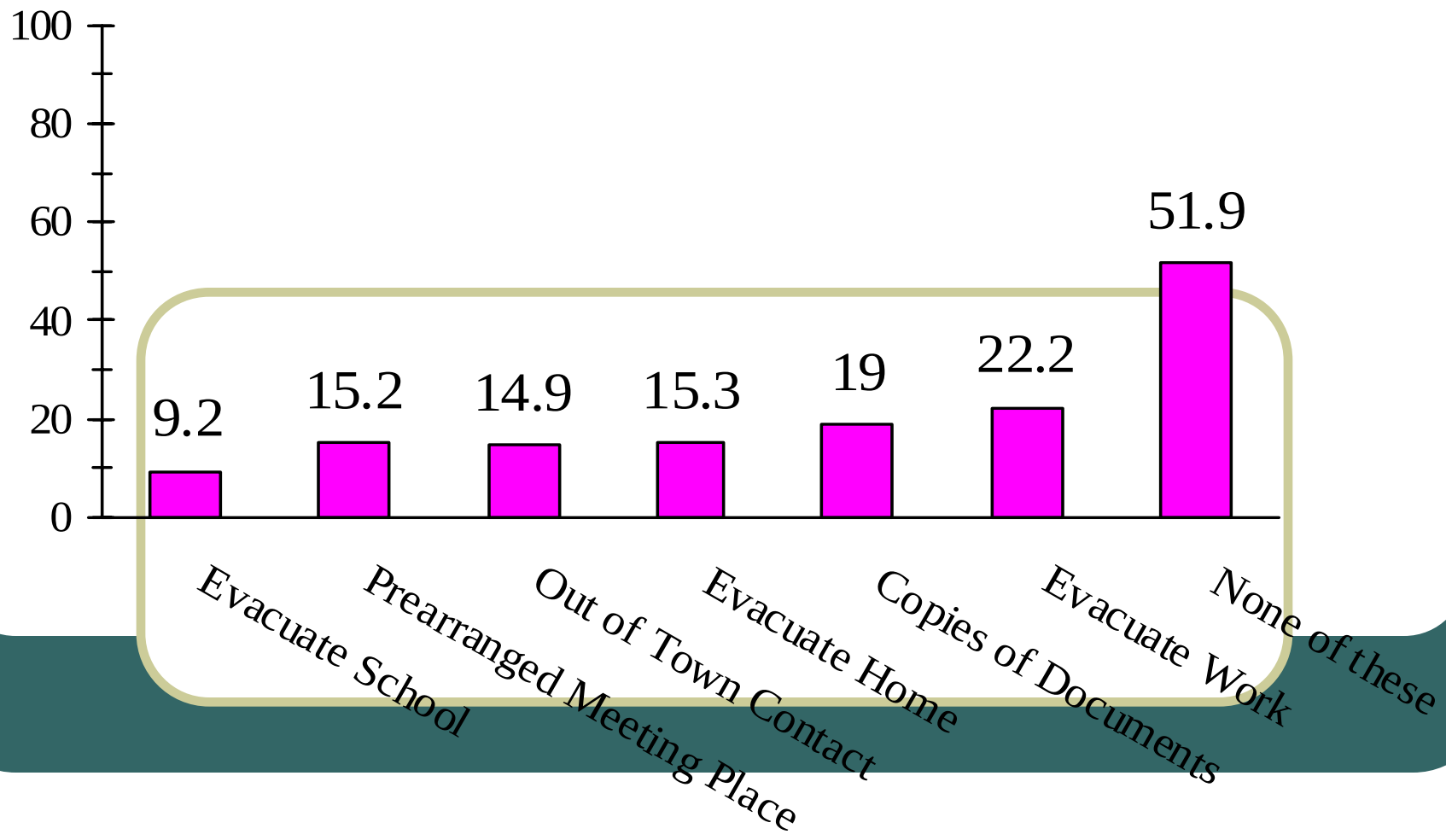
ANHCS - EPS add on : sample characteristics

- Gender
  - Male = 48.31%
  - Female = 51.69%
- Race / ethnicity
  - White, non-hispanic = 78.39%
  - Black, non-hispanic = 8.53%
  - Hispanic = 8.59%
  - Other, non- hispanic = 4.48%

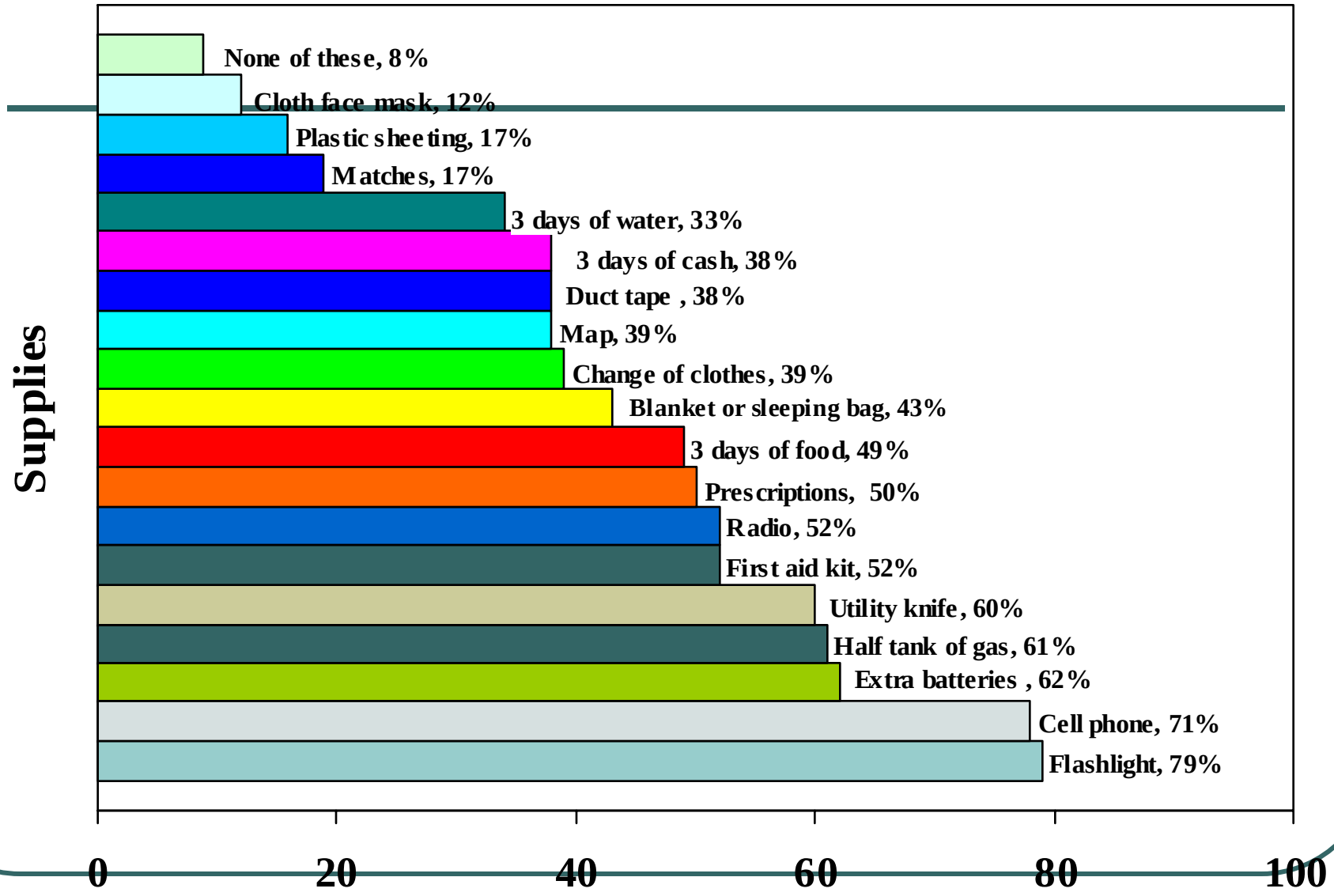
ANHCS - EPS add on : sample characteristics

- Own home: 71.39 %
- Marital status:
  - Married = 61.69%/
  - Not married = 38.31%
- Income
  - < $19, 999 = 18.48%
  - 20,000 - 39,999 = 26.66%
  - 40,000 - 75,000 = 33.76%
  - > 75,000 + = 21.05%

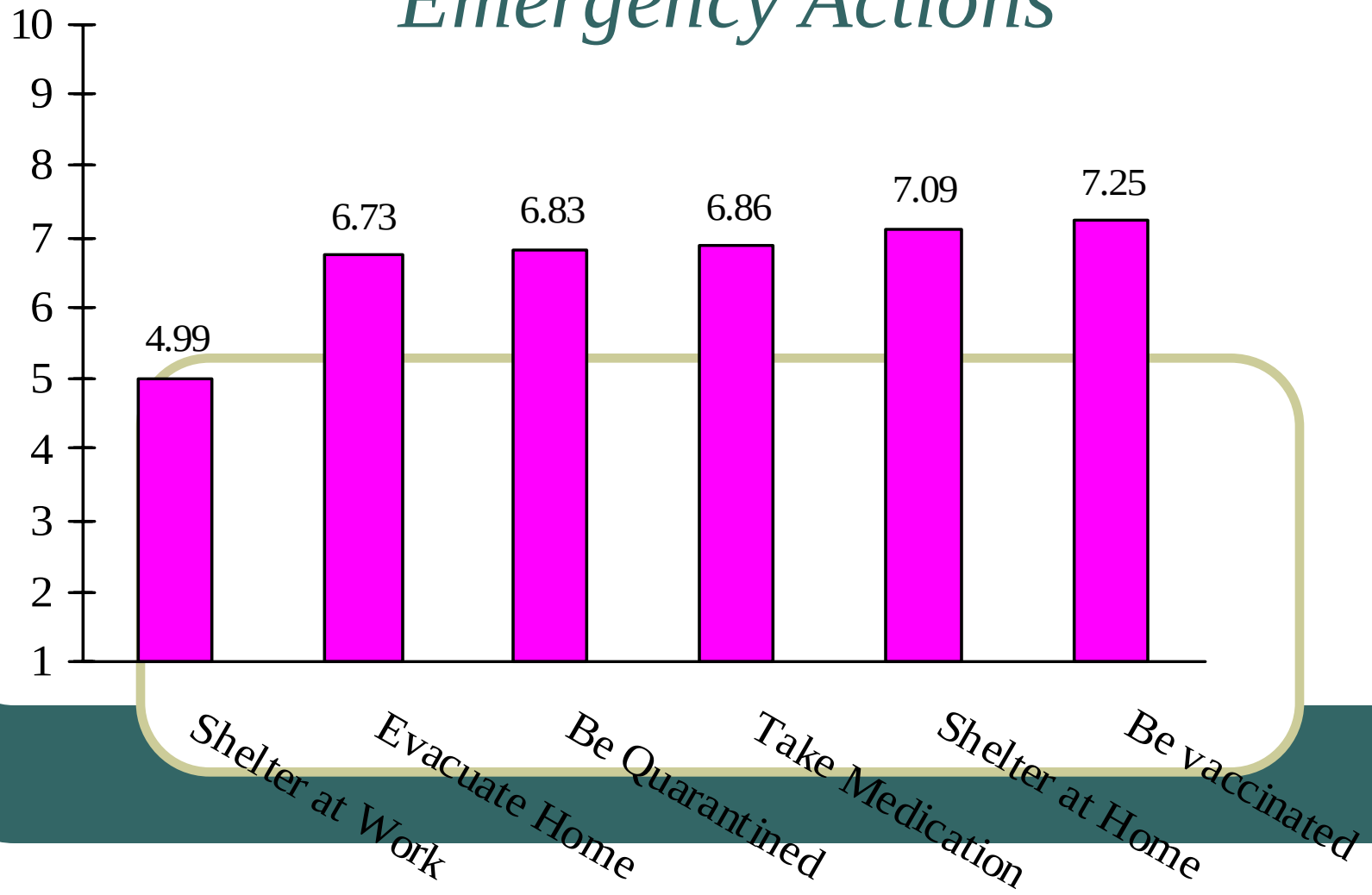
Percent Having Recommended Plans



Percent Having Recommended Supplies



Likelihood of Compliance with Emergency Actions



Correlations between media use in past 30 days, preparedness and compliance.

In the past 7 days, on how many days did you…	PLANS	SUPPLIES	COMPLIANCE
…read a newspaper?	.10**	.20**	.03
…watch the national news?	.08**	.21**	.03
…watch the local news?	.05**	.15**	.01
…listen to talk/news radio?	.08**	.14**	.02
…use the internet?	.09**	.01	.09**

** p < .01

Correlation between Constructs

Supplies			
Plans	.33**		
Compliance	.14**	.08**	
	Supplies	Plans	Compliance

** p < .01

Demographic Predictors

	Supplies	Plans	Compliance
Gender	**Male**	**Male**	**Female**
Age	**Older**	**Younger**	
Education Level		**Higher**	**Higher**
Income	**Higher**		
Household Size		**Larger**	**Smaller**
Health Status			**Poorer Health**

Regional Differences

Have Supplies		Have a Plan	
NE(317)	7.59 (5.13)	NE(317)	.85(1.45)
MW(406)	7.71 (5.09)	MW(406)	.79 (1.24)
SO(533)	8.28(4.87)	SO (533)	1.10(1.42)
WE(373)	8.51(5.10)	WE (373)	.96(1.33)
TOT (1629)	8.06(5.04)	TOT(1629)	.94 (1.37)
F = 2.89 (p < .05)		F = 4.36	(P < .005)

Regional Differences

Likelihood of complying

NE(317)	6.48(2.60)
MW(406)	6.58(2.32)
SO(533)	6.72(2.41)
WE(373)	6.64 (2.39)

TOT (1629) 6.62 (2.4)

F = .746 (NS)

Associations between Having Disaster Supplies/ Health Behavior/Media Use

Multinomial Logistic Regression – Very prepared relative to not prepared

Health status /behavior	Relative risk	Lower CI	Upper CI
Poor health status	**0.80**	**0.68**	**0.95***
Eat Fruits and vegetables	**1.15**	**1.01**	**1.33***
Get flu shot	**1.49**	**1.02**	**2.18***
Trust Information about health			
Trust TV	**0.62**	**0.42**	**0.92***
Trust Internet	**1.56**	**1.09**	**2.25***

* Significant at $p < 0.05$. Relative risks and 95% bias-corrected bootstrapped confidence intervals shown.

Associations between Compliance / Health Behavior/Media Use

Multinomial Logistic Regression – Very compliant to not compliant

	Relative risk	Lower CI	Upper CI
Health related behavior			
HIV Test	**1.32**	**1.01**	**1.75***
Genetic Test	**0.34**	**0.25**	**0.73***
Trust Information about health			
Trust Doctor	**3.37**	**1.49**	**7.57***

* Significant at $p < 0.05$. Relative risks and 95% bias-corrected bootstrapped confidence intervals shown.

Summary of ANCHS – EPS findings Findings

Despite numerous recent large scale disasters, US general public remains relatively ill prepared in terms of supplies, family communication and evacuation plans, and plans to comply with local authorities.

Preparedness and potential compliance increases as a function of:

- Exposure to news media and event-related stories;
- Population patterns and motivations behind acquiring supplies, plans and compliance may be distinct.
- Those in West and South have more supplies and plans.
- More health related behaviors are related to more disaster preparation
- More trust in doctors and internet sources of health information

LA County 2005 Formative research (Glik, Drury, Blevins,Tan – APHA 2006)

- All groups – even in LA – regardless of race or SES are complacent about disaster preparedness
- The behavior is periodic – after a disaster there is a flurry of activity which attenuates
- Issue for many is organizing and inventorying disaster supplies on an ongoing basis
- For some groups, resources are an issue
- Resistance to disaster preparation is neither strong nor organized, so campaign would be potentially successful

Redefine / expand health behavior construct to include disaster preparedness

- Despite many disaster preparedness campaigns : population surveys show Americans seem to be stuck at pre- Katrina levels of disaster preparedness
- How can we better cultivate ‘disaster preparedness’ behavior in the general public?
- Consider disaster prevention behavior as a dimension of health behavior.
- Integrate disaster preparedness as a component in community, workplace, school, patient based education.
- As a part of that process also integrate disaster preparedness questions into more generic health behavior surveys