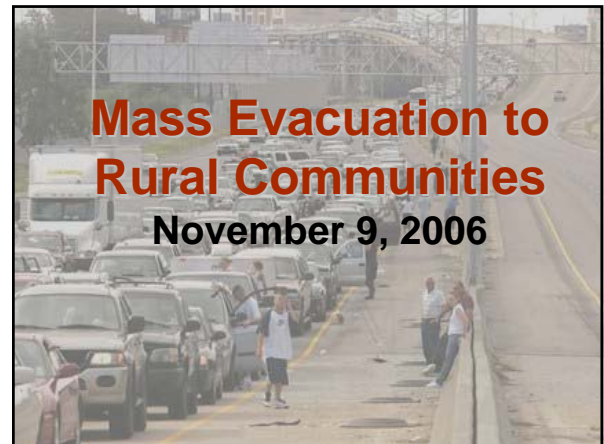




University at Albany Center for
Public Health Preparedness
Grand Round Series



Guest Speakers

Brian Gerber, PhD, Assistant Professor
Division of Public Administration
School of Applied Social Sciences
West Virginia University

Donald W. Rowe, PhD, Public Health Liaison
University at Buffalo, School of Public Health
and Health Professions

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Sponsors

**Western New York Public Health Alliance
Rural Advanced Practice Center**
funded by the National Association of
County and City Health Officials and
the CDC (Centers for Disease Control
and Prevention)

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Call-In

Phone: 800-452-0662

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Evaluations

UAlbanyCPHP.org/evals

**Nursing Contact Hours,
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- 8 County Health Departments: Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, and Wyoming
- Formally the Western New York Public Health Coalition (Early 1990's)



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- Mission: "...through partnerships...enable an integrated regional approach to achieve healthier communities..."
- Vision: to improve the health, safety and wellness of the eight county region



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- Federal grant award for development of Rural Preparedness Advanced Practice Center
- Preparedness Issues of Focus
- *Evacuation/migration of populations from urban to rural*
 - Cross border issues (state and international)
 - Training needs pertinent to rural communities
 - Partnerships and collaboration to address rural preparedness

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City of Buffalo

- Buffalo-Niagara Falls Metropolitan Area
 - Population: 1,147,711
- City of Buffalo
 - Population: 279,745



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Hurricane Katrina Evacuation



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Total population 1.6 million, almost 376,000 (23.5%) live in rural areas



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Evacuation Planning Tool

- Web map-based spatial analysis tool
- Predict post-event rural surge
- Audience: Health departments, community agencies, emergency coordinators, etc.

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Evacuation from Public Health Emergencies

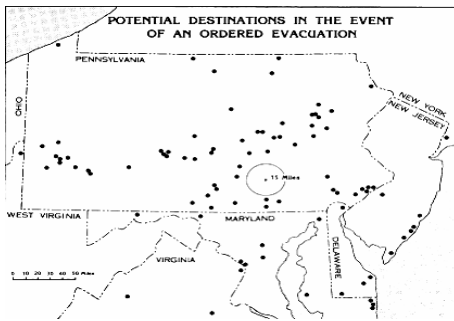
Three Mile Island, Pennsylvania – 1979

- Perceived Risk
- Evacuation Shadow
 - Recommended:
 - Pregnant women and children under 5 within 5 miles - approx 3500
 - Actual:
 - 144,000 people (39%) within 15 miles

Study: Zeigler and Johnson (1984)

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Three Mile Island Evacuation



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Other Evacuation Events

Event	Percent of Evacuees	Source
Hurricane Floyd	65% of coastal S.C.	Dow & Cutter, 2002
Major Hurricanes	83% at risk	Baker, 1991
Major Disaster	50% households	Drabek, 1986
Hurricane Bonnie	26% coastal N.C	Whitehead, et al., 2000

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Evacuation to Rural Areas

- Study of a hypothetical catastrophic terrorist attack in Washington, DC
 - A potentially large-scale spontaneous mass evacuation of area residents

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Study Objectives

- To identify the relationship between terror events and evacuation behavior in the general public
- To understand the potential scale of such an evacuation event
- To identify preparedness issues for rural areas that might act as receiving areas for evacuees

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Key Findings

- Potential for a large scale, uncontrolled self-evacuation as a result of a terrorist attack is high
- Mass self-evacuation events are likely to be chaotic:
 - Stated target destinations are highly dispersed
 - A large proportion of the public expresses a willingness to self-evacuate even absent specific event information

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Key Findings

- Preparedness for evacuation events in rural areas:
 - Is a function of specific geographic issues
 - Urban proximity, proximity to nuclear power facilities and available resources
 - Most rural communities will face significant challenges
 - Managing evacuee sheltering; traffic

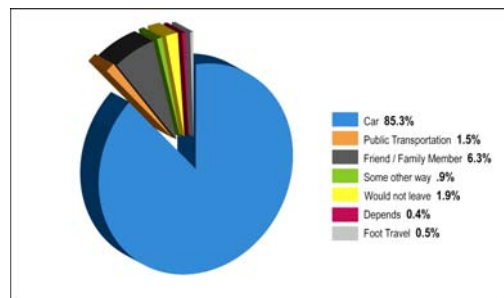
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Study Design

- Random-digit dial telephone survey (July – August 2006)
 - 800 households
 - Greater Washington, D.C. area
 - Maryland Counties: Baltimore, Carroll, Frederick, Howard, Montgomery
 - Virginia Counties: Arlington, Fairfax, Loudon, Prince William
 - West Virginia Counties: Berkeley, Jefferson, Morgan
- Other data gathered:
 - Interviews conducted with county-level emergency managers in study region and other locations

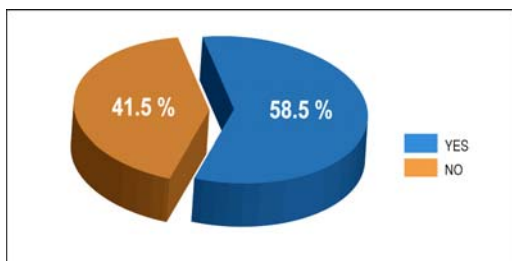
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Reported Mode of Self-Evacuation from a Natural Disaster



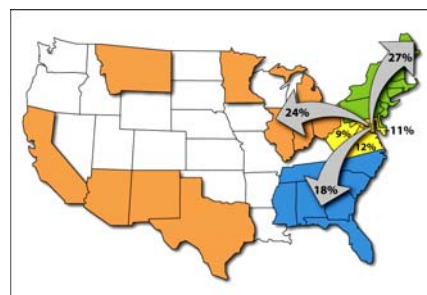
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Specific Target Destination?



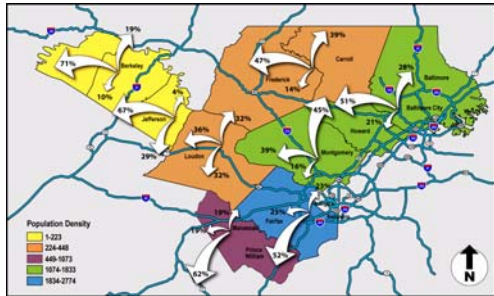
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Distribution of Reported Target Destinations if Self-Evacuating From a Natural Disaster



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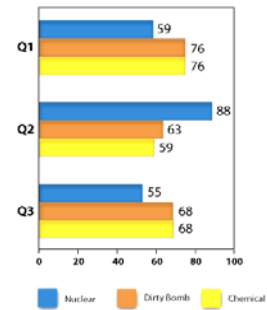
Distribution of Reported Target Destinations if Self-Evacuating From a Natural Disaster



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Terror Events: Perceived Risk

- Q1: How likely is this event to occur in DC?
- Q2: How likely is significant injury to you and family from event?
- Q3: How likely are multiple events?



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Reported Propensity to Self-Evacuate

Type of Attack	“Very” & “Somewhat Likely”
Nuclear	83%
Radiological	76%
Chemical	67%

- No statistically significant differences between residents of MD, VA, WV

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Information Sources used for Self-Evacuation Decisions

- What would your most important sources of information be in the aftermath of an event?
 - 43% - News coverage of event
 - 43% - Government announcements

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Information Sources used for Self-Evacuation Decisions

- If there were no local news coverage of the event available, would you stay in place?
 - 67% - Likely to stay in place
 - 33% - Likely to leave w/o news info

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Assumptions

Given:

- The size of the population surrounding the DC area
- The reported propensity to self-evacuate
- Overwhelmingly by automobile
- The distribution of target destinations
- The perceived vulnerability of harm to terror
- Attacks and anticipation of multiples attacks

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Assumptions

Result:

- A large-scale, chaotic mass self-evacuation should be anticipated

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Willingness to Adhere to a Shelter-in-Place or Evacuation Directive

Type of Attack:	Very likely to shelter in place	Very likely to evacuate
Nuclear	60.6%	79.9%
Radiological	65.3%	77.5%
Chemical	65.9%	75.7%

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Public Confidence in Evacuation Planning

A natural disaster event?	A great amount	6.6%
	A moderate amount	36.8%
	Very little	38.2%
	No trust at all	18.5%
A terrorist event?	A great amount	7.5%
	A moderate amount	36.3%
	Very little	39.1%
	No trust at all	17.1%

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Mass Evacuations and Terror Events: Observations from Survey Data

Residents express:

- A relatively high degree of anticipated vulnerability to terror attacks
- A high propensity to self-evacuate and evacuation destinations are likely to be widely distributed geographically
- A low confidence in governmental evacuation planning for disasters

Cont.
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Mass Evacuations and Terror Events: Observations from Survey Data

- Absent available local information, a large proportion of area residents are likely to evacuate.

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Mass Evacuations to Rural Areas: Receiving Evacuees

- Concept of community surge capacity
 - Available civil infrastructure
 - Transportation infrastructure
 - Available potable water supply
 - Sheltering facilities
 - Power and communications infrastructure
 - Health care facilities and personnel resources

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Mass Evacuations to Rural Areas: Receiving Evacuees

Cont.

- Administrative resources
- Emergency services resources including:
 - Personnel
 - Policy and operational coordination with surrounding communities
 - Existing planning and preparedness efforts

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Types of Evacuee Ingress Events

- 1) Limited duration ingress
- 2) Longer duration ingress
- 3) Ingress that includes the separate concern of contaminated persons

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Planning Challenges

Problems of planning for ingress issues:

- Traffic management plans and evacuation studies (usually from nuclear or hurricane planning) assess movement of vehicles but ignore other human factors
- Impacts on destination communities or points along the routes are not a focus for analysis

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Planning Challenges

Potential need for regional coordination

- Alleviate some of the problems associated with a large scale mass evacuation following a terror attack
- Institutions for promoting such coordination are either quite new or proceeding ad hoc

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Planning Challenges

- Local resources can endure for the 72-hour delay for federal resources to arrive during a "typical event"
 - Overwhelms local resources; does not fit well with typical disaster assistance models of the receiving community

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Planning Challenges

- Need to adjust plans for evacuation events of different scale and duration
 - Distinctions between radiation events and biological
 - Self-evacuation to avoid infectious disease
- Movement from an event site through rural areas and issue of contamination: assessment versus capacity to decontaminate

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Concluding Remarks

- Specific prospective behavior of the public in the case of emergency evacuation is not well understood:
 - Study results suggest a real propensity to self-evacuate when confronted with different types of terror attack scenarios.
 - Rural areas as receiving communities for evacuees will need to address a host of serious planning issues to mitigate harm from an evacuation event itself.

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Resources

- WVU Report on DC evacuation study <http://www.vmc.wvu.edu/evac.htm>
- Considering the Effects of a Catastrophic Terrorist Attack http://www.rand.org/pubs/technical_reports/TR391/
- Redefining Readiness: Terrorism Planning Through the Eyes of the Public <http://www.cacsh.org/>

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Resources

- The U.S. and Nuclear Terrorism: Still Dangerously Unprepared http://www.psr.org/site/DocServer/PSR_NuclearTerr_rpt_full.pdf?docID=781
- Community Shielding in the National Capital Region: A Survey of Citizen Response to Potential Critical Incidents http://www.healthsystem.virginia.edu/internet/ciag/publications/community_shielding_report_body.pdf

45

Resources

- Western NY Public Health Alliance www.wnypha.org/
- November 17, 2006 Conference: Public Health Emergencies: A Cross-Border Challenge www.law.buffalo.edu/baldycenter/publichealth06.htm

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Evaluations

www.UAlbanyCPHP.org/evals

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December 14, 2006

Managing Contemporary Mass Fatalities Incidents

Dennis McGowan

Lead Instructor, National
Mass Fatalities Institute

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