



University at Albany Center for
Public Health Preparedness

Grand Round Series

October 11, 2007
10:00am – 11:15 ET



Guest Speakers

Michael Meit, MA, MPH
Deputy Director,
National Opinion Research Center (NORC)
Walsh Center for Rural Health Analysis

NORC at the UNIVERSITY OF CHICAGO

Paul Kuehnert, MS, RN
Exec. Director, Kane County Health Dept.
Fmr. Deputy State Health Officer and
Preparedness Director, State of Maine

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County and City Health Officials

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(Centers for Disease Control and Prevention)

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Spontaneous Evacuation

- Evacuation should not be conceptualized as the government bringing in buses and taking people to shelters



- Rather, the vast majority of people evacuate on their own, in their own vehicles

- *Where do they go?*
- *What are the implications for reception communities?*

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Walsh Center for Rural Health Analysis Evacuation Project

- Funded by HRSA, Office of Rural Health Policy
 - Key informant interviews
 - National survey of urban residents to assess evacuation intentions



- Findings to inform development of the modeling and spatial analysis tool

walshcenter.norc.org

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Key Informant Interviews: Three Groups

- National Experts (6)
 - Academics
 - Government Experts
 - Private-Sector Researchers
- Urban/Rural Pairs
 - Local Rural Preparedness Experts (6)
 - Local Urban Preparedness Experts (5)
 - Emergency preparedness coordinators
 - Public health department directors

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Key Informant Interview Findings - Specific Findings

- Urban:
 - Few have considered urban evacuation to rural communities
 - Most feel citizens will go to other urban areas, where they will "feel comfortable"
- Rural:
 - It will take fewer evacuees to overwhelm smaller, rural community systems
 - An analysis of the ratio of evacuees to existing population is an important planning consideration.

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Key Informant Interview Findings Rural Concerns and Needs

Concerns of Rural Planners:

- Sufficient resources/infrastructure
 - Food, health support, law enforcement, water (particularly in drought-prone areas)
 - Traffic and transportation issues

Needed Information and Resources:

- Numbers/estimates of evacuees
- Special needs of evacuating urban center: who is coming (e.g., elderly, disabled, etc.)

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Key Informant Interview Findings - Overall Recommendations

- Regional planning to pool resources
- Evacuation "to" AND "through"
- Strengthen infrastructure to address population surge, as well as to enhance overall preparedness

Cont.

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Key Informant Interview Findings - Overall Recommendations

Cont.

- Federal and state guidance should prompt rural communities to plan for the reception of evacuees
 - Use of preparedness funding to support planning should be encouraged
- Cultural competency information & training is needed in destination communities

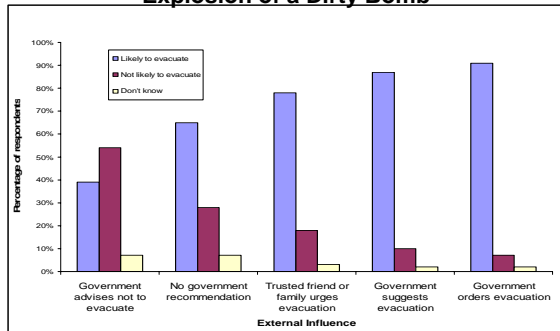
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NORC Walsh Center Nat'l Survey of Urban Residents

- Prior surveys done before 9/11, Anthrax, and Katrina
- Intent was to determine evacuation likelihood given a hypothesized change in national mindset

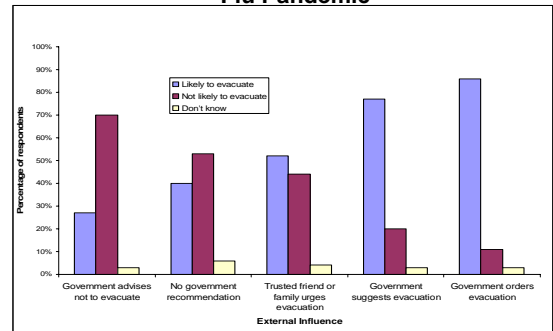
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Expected Reactions to Explosion of a Dirty Bomb



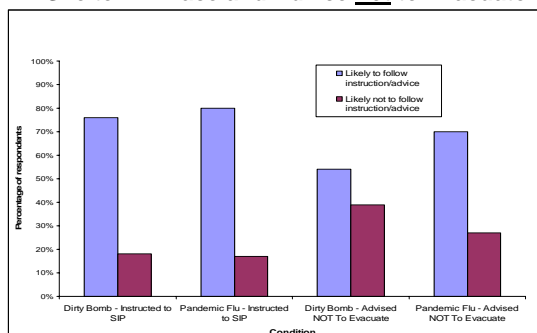
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Expected Reactions to a Flu Pandemic



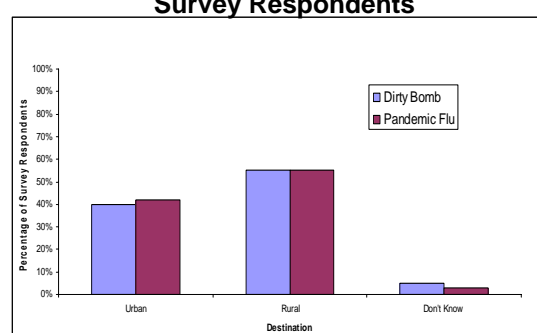
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Likelihood of following instructions to Shelter-in-Place and Advice not to Evacuate



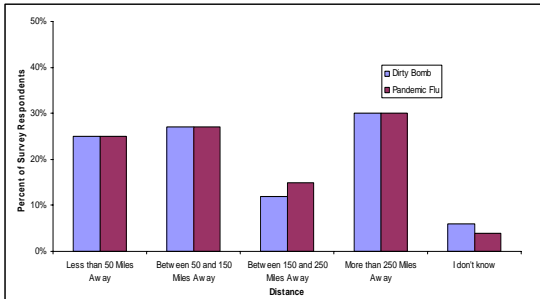
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Expected Destinations of Survey Respondents



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Expected Travel Distances of Survey Respondents



Likelihood of Evacuation by Race/Ethnicity

- Dirty Bomb
 - Black and Hispanic almost 2 times more likely to evacuate than whites
- Pandemic Influenza
 - Black 3.2 times more likely
 - Hispanic 2.5 times more likely

Kane County, Illinois

- Far western Chicago metro area
- Population 500,000
- 500 square miles
- Urban, suburban and rural communities (approximately 40% land mass remains rural)
- County Health Director is also Executive Director of the Office of Emergency Mgmt

Evacuation Assumptions

- Event causing evacuation does not impact metro outside Chicago
- Population of Chicago = 3 million
- 80% would (attempt) evacuation by private vehicle
- 600,000+ to be evacuated by mass transit (include most vulnerable populations)

Chicago Evacuation Impact Zone



Chicago Commuter Rail Lines



Routes Thru/To Kane

- 2 major expressways
- 3 U.S. highways
- 11 state highways
- 3 commuter rail lines

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Concept of Operation

After a Chicago evacuation order is issued:

- Activate the Crisis Management Team
- The County Board Chairman will issue a “State of Emergency” declaration
- Notify Municipal Elected and Public Safety Officials
- Notify the Public Health System
- Activate the Sheriff’s Tactical Response Plan
- Activate the County Emergency Operations Center

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Concept of Operations

Cont.

Once the EOC is activated the OEM staff will:

- Obtain bed availability for area hospitals
- Poll the area hotels/motels to determine the number of available beds
- Establish a media center

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Plan Components

- Traffic:
 - Private vehicles
 - Commuter trains
- Mass care & feeding
- Communications
- Public health & health care
- Volunteer management
- Data management
- Security

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Lessons Learned

- Tabletop conducted in Fall, 2006
- Viable... *IF* numbers of evacuees are limited
- Surge of >1500 would be beyond capacity for triage, shelter and care
- Resources may be strained

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Recommendations

- Convene/participate in regional evacuation task forces
- Consider both spontaneous and planned evacuation scenarios
- Be as creative and flexible as possible
- Advocate for resources

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WNYPHA

- Funded by NACCHO as a Rural Advanced Practice Center
 - *Spatial Analysis Web-Based Tool*
 - Predict post-event rural population surge resulting from the mass evacuation of an urban area

WNYPHA APC Project: An Environmental Scan

- Community risk assessments focus on issues within the specific community not implications of population surge from evacuating urban residents.
- Public health infrastructure is likely to be stretched thin and/or overwhelmed

Cont.

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WNYPHA APC Project: An Environmental Scan

Cont.

- Public health infrastructure is likely to be stretched thin and/or overwhelmed
- Evacuation planning research focused on the exodus of urban citizens with little focus on likely destinations or secondary impacts.

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Modeling and Spatial Analysis Tool

- Map-based tool to predict community population surge following potential urban disasters.
- Used as a planning tool for preparedness planners

Cont.

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Modeling and Spatial Analysis Tool

Cont.

- Used as an educational tool to inform policy makers about the issue of population surge
- Includes information on the number of likely evacuees, evacuee demographic information (such as presence of children, disability status, etc.), and local planning information

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How The Tool Works – Three Types of Variables

Scenario Specific Variables:

- Dirty bomb, pandemic flu, industrial/chemical
- How much “push” does it have?
- How many urban citizens are likely to evacuate as a result?

Demographics Variables:

- Who is more or less likely to evacuate?

Cont.

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How The Tool Works – Three Types of Variables

Cont.

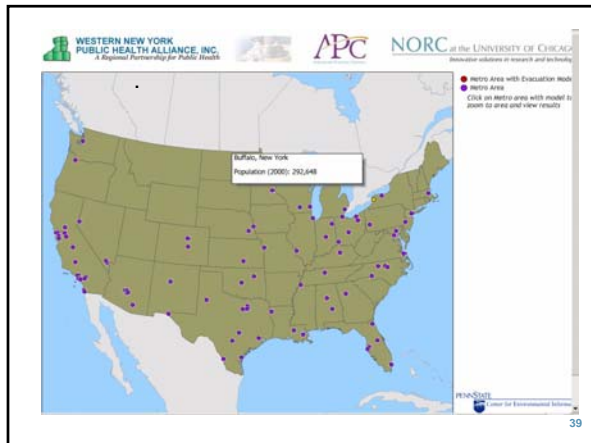
Pull Variables:

- Which areas will be more or less attractive to evacuees?
- Attractive features: road networks into the county, number of hotel rooms and second homes, family networks, etc.

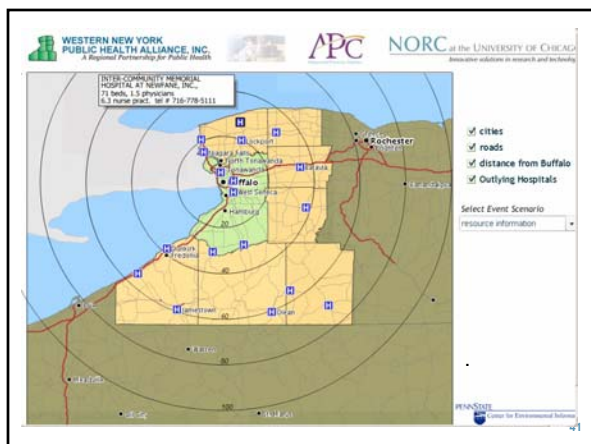
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Creating the Tool

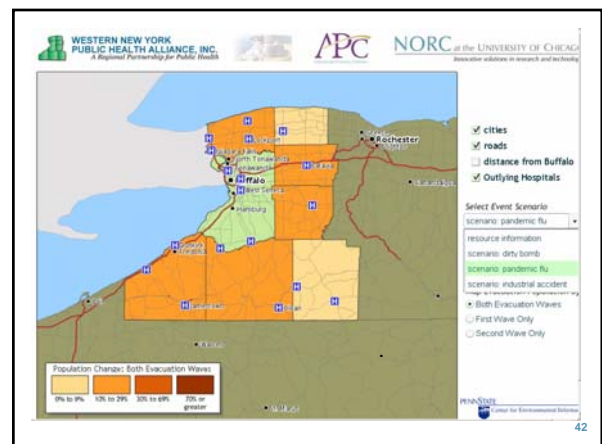
- Identified content to be included in partnership with WNYPHA members
- Developed modeling algorithms using national data sets
- Set variables using historical evidence, research data, and expert opinion
- Worked with the Pennsylvania State University Center for Environmental Informatics to develop a user friendly web-based interface



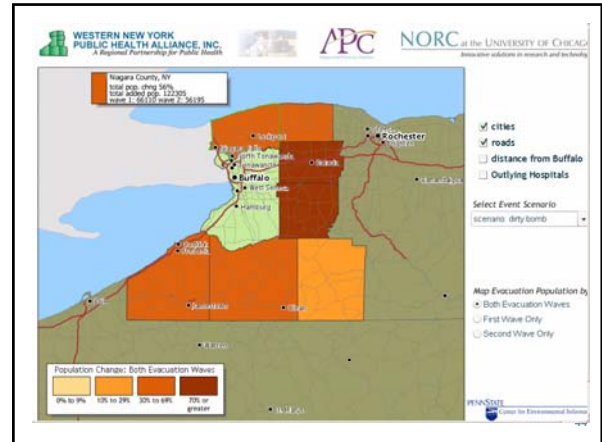
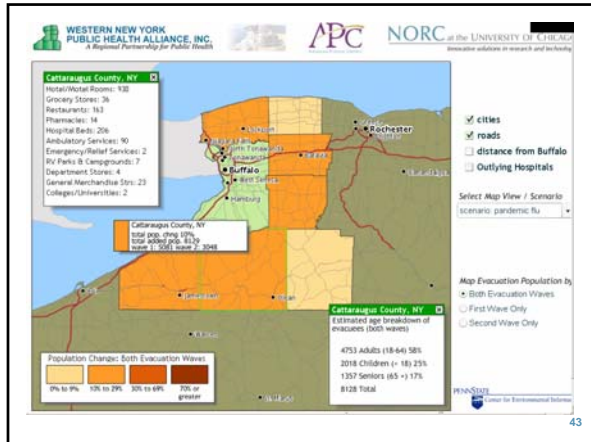
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Next Steps

National Expansion

- Include at least the 100 largest U.S. urban centers and surrounding counties within at least a 150-mile radius.

Refining Algorithms and Variables

- Refine algorithms and identify variables for enhanced precision of estimates.

User Testing

- Conduct web-based user testing to refine the user interface and produce optimal outputs to stimulate preparedness planning.

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Future Directions

- Integrated training component
- Planning guidelines
- Modeling of non-evacuees
- State-specific versions

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Resources

- Walsh Center for Rural Health Analysis
walshcenter.norc.org
- Western New York Public Health Alliance
www.wnypha.org
- NACCHO Advance Practice Centers
www.naccho.org/topics/emergency/APC.cfm
- Kane County Health Department, IL
www.kanehealth.com

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November 8, 2007

Rad Events:

**Psycho-Social Issues and
Risk Communication**

Dr. Tim Tinker, TIM TINKER, MPH, Dr.PH
Senior Vice President, Widmeyer Communications
Co-Founder, Consortium for Risk & Crisis Communication

**Dr. Brian Flynn, Center for the Study of Traumatic
Stress at the Uniformed Services Univ. of Health
Sciences in Bethesda, MD**