# Preparing for Functional Needs While Sheltering During a Disaster — Kentucky, 2011

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Centers for Disease Control and Prevention

# Commonwealth of Kentucky

- State rankings
  - 36th for land area
  - 26th in population
  - 8th for declared disasters
- Recent disasters
  - Floods
  - Tornadoes
  - Landslides
  - Ice storms
- Need for emergency shelters

# Ice Storm, 2009

- >200 shelters opened; population >7,000
- Kentucky ranks top 10 for chronic diseases, smoking, and number of prescriptions filled

# Person with Functional Needs

- A person who, under usual circumstances, is able to function independently or with support systems

- Their level of independence is challenged during an emergency

# Examples of Functional Needs Population

- Disabilities
- Living in institutionalized settings
- Women in late stages of pregnancy
- Elderly
- Children
- Limited English proficiency
- Limited access to transportation

# Americans with Disabilities Act (ADA) Amended 2008

**General population shelters should offer individuals with disabilities the same benefits provided to those without disabilities. These benefits include:**

- Safety
- Comfort
- Food
- Medical care
- Support by family and friends

# Functional Needs Support Services

- Reasonable modifications to policies, practices and procedures
- Durable medical equipment
- Consumable medical supplies
- Personal assistance services
- Other goods and services as needed

# Objectives

- Describe burden of functional needs within the community
- Obtain a baseline assessment of the community's preparedness status and knowledge level
- Provide training for local health departments and USPHS deployment teams

## Methods

# COMMUNITY ASSESSMENT FOR PUBLIC HEALTH EMERGENCY RESPONSE (CASPER)

# Community Assessment for Public Health Emergency Response (CASPER)

- Epidemiologic tool for rapid response
- Weighted sampling design
  - Household-level information
  - Low cost
- Information for public health response planning

# Multi-stage Cluster Sampling Methodology

- **Define sampling frame (population of concern)**
  - Political boundaries
  - Geographic boundaries
  - Subpopulation of affected area

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- **7 households/cluster**
- **Data weighted**
  - account for incomplete sampling
  - provide population estimates

# Kentucky: Multi-stage Cluster Sampling Methodology

- **Sampling frame (population of concern)**
  - Western Kentucky (2)
  - Eastern Kentucky (2)
- **30 clusters/region**
  - census block groups
- **7 households/cluster**
  - random GPS waypoints generated using GIS and 2010 census data

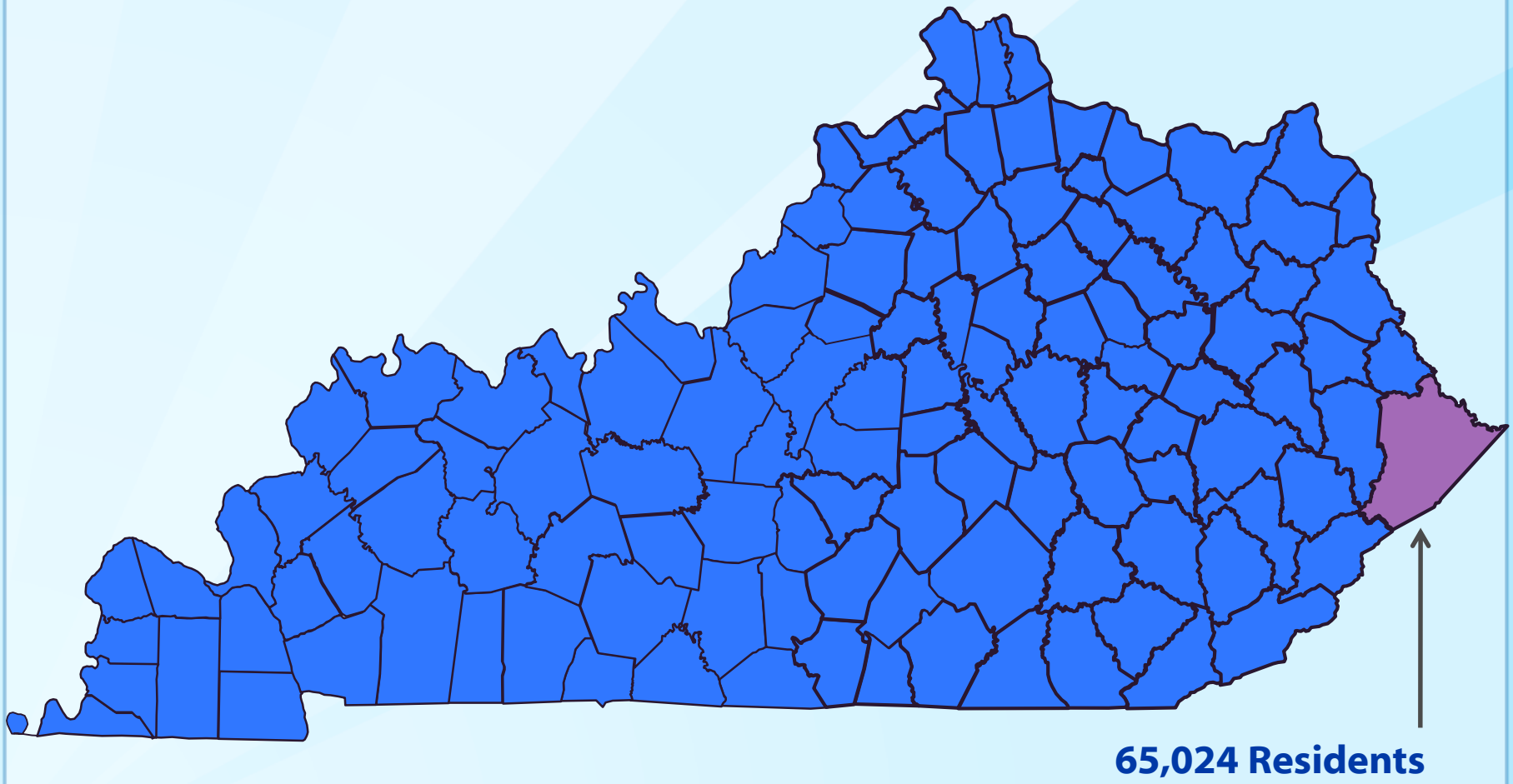
# Assistance from North Carolina

- University of North Carolina Center for Public Health Preparedness
- North Carolina Division of Public Health
- Conducted sampling
- Provided technical assistance

# United States Public Health Service

- **Deployment exercise**
  - Western Kentucky, May 2011
  - Eastern Kentucky, June 2011
- **Develop partnerships with local and state health departments**
- **Provide support to address high priority public health projects identified by state and county**

# Pike County, Kentucky



# Survey Questions

- Demographics
- Chronic health conditions
- Assistive services and devices
- Household structure
- Disaster and sheltering history
- Preparedness status

# Data Collection

- 17 Interview teams
  - USPHS officers
  - Local and state health department staff
  - University students
  - Neighboring state and local health departments
- Training
  - CASPER methodology
  - Hand-held PDA

# Survey Completion

375 Homes Approached

↓

252 Doors Answered

↓

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**26,728 Occupied Households Represented**

# Demographics

| Households with occupants | No. | % | 95% CI |
|---|---|---|---|
| Aged <2 yrs | 17 | 8 | 4.1–12.6 |
| Aged >65 yrs | 54 | 27 | 19.3–34.9 |
| Median household size (range) | 2 (1–10) | | |

# Chronic Health Conditions

| | No. | % | 95% CI |
|---|---|---|---|
| Cardiovascular disease | 103 | 51 | 41.5–59.9 |
| Visual impairment | 58 | 29 | 18.8–39.0 |
| Diabetes | 57 | 28 | 21.7–34.3 |
| Physical impairment | 47 | 24 | 18.1–29.0 |
| Chronic lung disease | 46 | 23 | 16.9–29.0 |
| Asthma | 42 | 21 | 15.0–26.1 |
| Neurologic disorders | 25 | 12 | 7.6–17.2 |

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# Assistive Devices and Services

| | No. | % | 95% CI |
|---|---|---|---|
| Cane/walker | 31 | 15 | 10.6–20.2 |
| Oxygen | 23 | 12 | 7.0–16.2 |
| Home health/ home- or bed-bound | 17 | 9 | 4.0–13.6 |
| Wheelchair | 16 | 8 | 4.2–12.1 |

# Structure Type

| | No. | % | 95% CI |
|---|---|---|---|
| Single family home | 152 | 75 | 68.0–82.0 |
| Mobile home | 47 | 23 | 15.6–29.6 |
| Multi-unit | 5 | 2 | 0.0–5.4 |

# Sheltering in Place During a Natural Disaster

| | No. | % | 95% CI |
|---|---|---|---|
| Lived in Pike County during past disaster | 170 | 83 | 75.9–90.4 |
| Shelter in Place | 136/170 | 80 | 70.2–89.0 |

# Food and Water

| Households with 3-day supply/person | No. | % | 95% CI |
|---|---|---|---|
| Food | 191 | 94 | 90.0–97.6 |
| Water | 131 | 65 | 57.3–72.5 |

# Alternative Energy or Heat Source

| Energy/heat source | No. | % | 95% CI |
|---|---|---|---|
| Charcoal/gas grill | 151 | 79 | 73.1–84.3 |
| Kerosene heater | 94 | 46 | 36.7–55.2 |
| Generator | 73 | 36 | 28.9–42.5 |

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| ≥1 Source | 183 | 89 | 24.5–94.2 |

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| Generator | 73 | 36 | 28.9–42.5 |
| ≥1 Source | 183 | 89 | 24.5–94.2 |
| Carbon monoxide detector | 75/183 | 41 | 32.7–48.9 |

# Conclusions

- Substantial functional needs identified in Pike County
- Gaps identified in household preparedness and knowledge level
- Collaboration and training for health departments and USPHS deployment teams

# Limitations

- Survey conducted mostly during work hours
- Some interviewers probed residents more than others

# Recommendations

- **Equip shelters for vulnerable populations**
  - Bottled or powdered formula with safe water for mixing
  - Medications and equipment for chronic diseases
  - Structural modifications for visual/physical impairment
  - Portable oxygen generators
- **Educate residents**
  - Emergency household supply of food, water, medicines
  - Transportation for nonambulatory family members
  - Pre-identify emergency shelter location if mobile home
  - Safe use of alternative energy/heat sources
  - Carbon monoxide detectors

**“Disasters are always inclusive. Response and recovery are not, unless we plan for it.”**

-June Isaacson Kailes
Disability Policy Consultant

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

# Discussion

- 23% of dwellings are mobile homes

# Comparisons Between CASPER and Alternate Data Sources

| | CASPER | BRFSS | Census 2010 |
|---|---|---|---|
| Households with persons aged >65 yrs | 27.1% | | 25.4% |
| Asthma | 20.5% | 18.0% (adults) | |
| Diabetes | 28.0% | 14.0% (adults) | |
| Cardiovascular disease | 50.7% | 37.7% (hypertension) | |