

American Red Cross & CDC Response to the Alabama Tornado Outbreak – April 2011

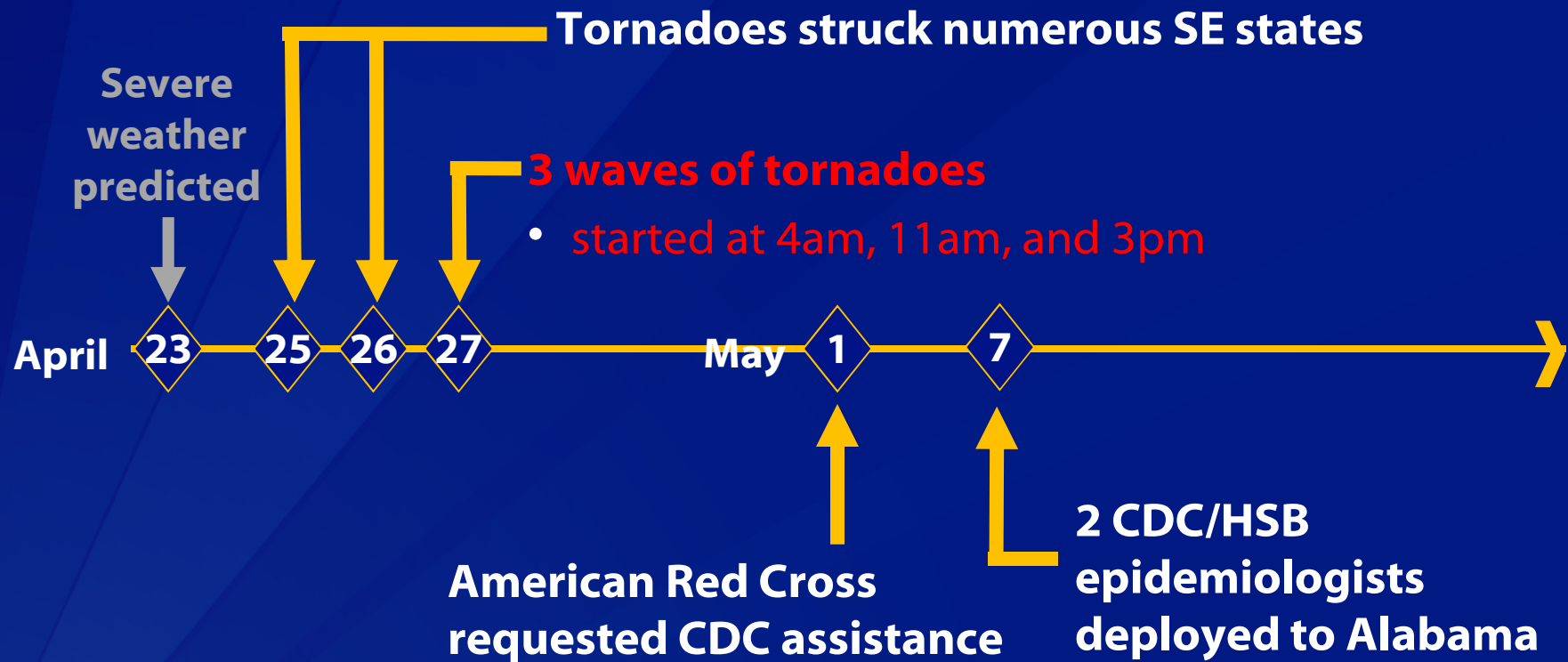
CSTE Disaster Epidemiology Subcommittee Workshop
May 9, 2012

April 27, 2011 Tornadoes in Alabama



- ❑ **3rd deadliest in US history**
- ❑ **62 tornadoes (11 EF-4/5)**
 - >200 fatalities
 - >2,000 injuries
 - >\$4 billion in damage
- ❑ **Second largest response for American Red Cross**

Timeline of Activities



CDC/HSB Mortality Surveillance

- ❑ **Partnership with the American Red Cross**
 - Developed the Surveillance Advisory Group
- ❑ **Mortality Surveillance Form**
 - Receive from the American Red Cross after every major disaster
- ❑ **Deployment with the American Red Cross for the Alabama Tornadoes**
 - Allowed for access to the Integrated Care Teams (ICTs)
 - Integrated into American Red Cross in-field procedures

Integrated Care Teams (ICTs)

- ❑ **Second time used ICTs**
- ❑ **Three member teams**
 - 133 American Red Cross volunteers over approximately 6 weeks
- ❑ **Attempted visits for every family with a deceased**
- ❑ **Conducted unstructured interviews**
 - Coroners, hospitalized patients, surviving family members
 - Research was *not* primary reason
 - CDC requested information concerning warnings & location
- ❑ **Utilized various forms**
- ❑ **Data extracted by CDC/HSB epidemiologists in the field**

Surveillance Data Sources

1

Condolence
worksheet

Purpose: Information gathering for deceased

Information: Basic circumstance of death, location of family

Format: One form per death

*****CDC De-identified all data of living individuals*****

Surveillance Data Sources

1

Condolence
worksheet

2

Casework record of
families with
deceased

Purpose: Document condolence visits to families

Information: Household info and circumstances of death

Format: One form per household

*****CDC De-identified all data of living individuals*****

Surveillance Data Sources

1

Condolence
worksheet

2

Casework record of
families with
deceased

3

Mortality surveillance
form

Purpose: Routine surveillance during disasters

Information: Demographics and circumstances of death

Format: One form per death

CDC/HSB Mortality Study

1

Condolence
worksheet

2

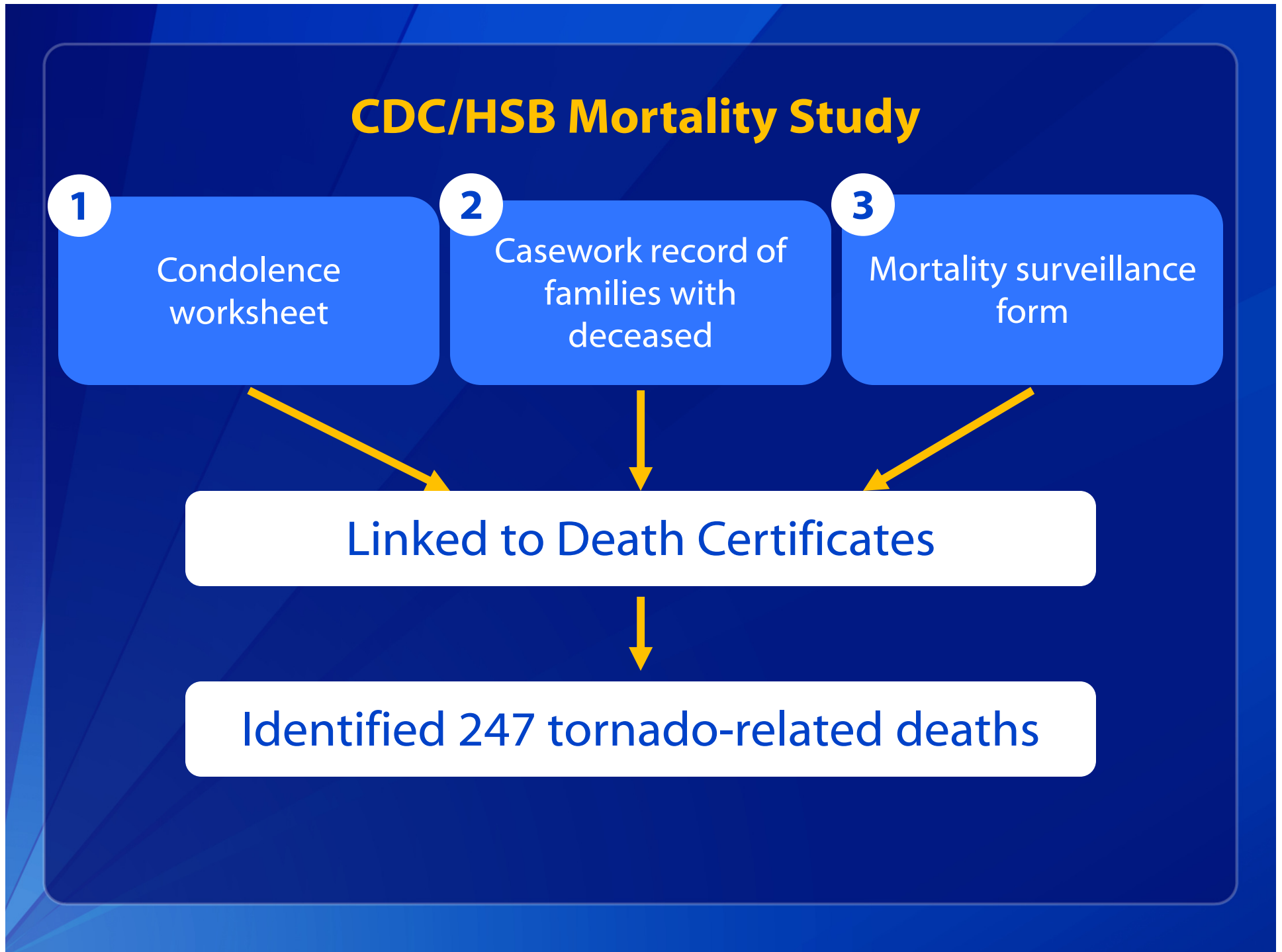
Casework record of
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3

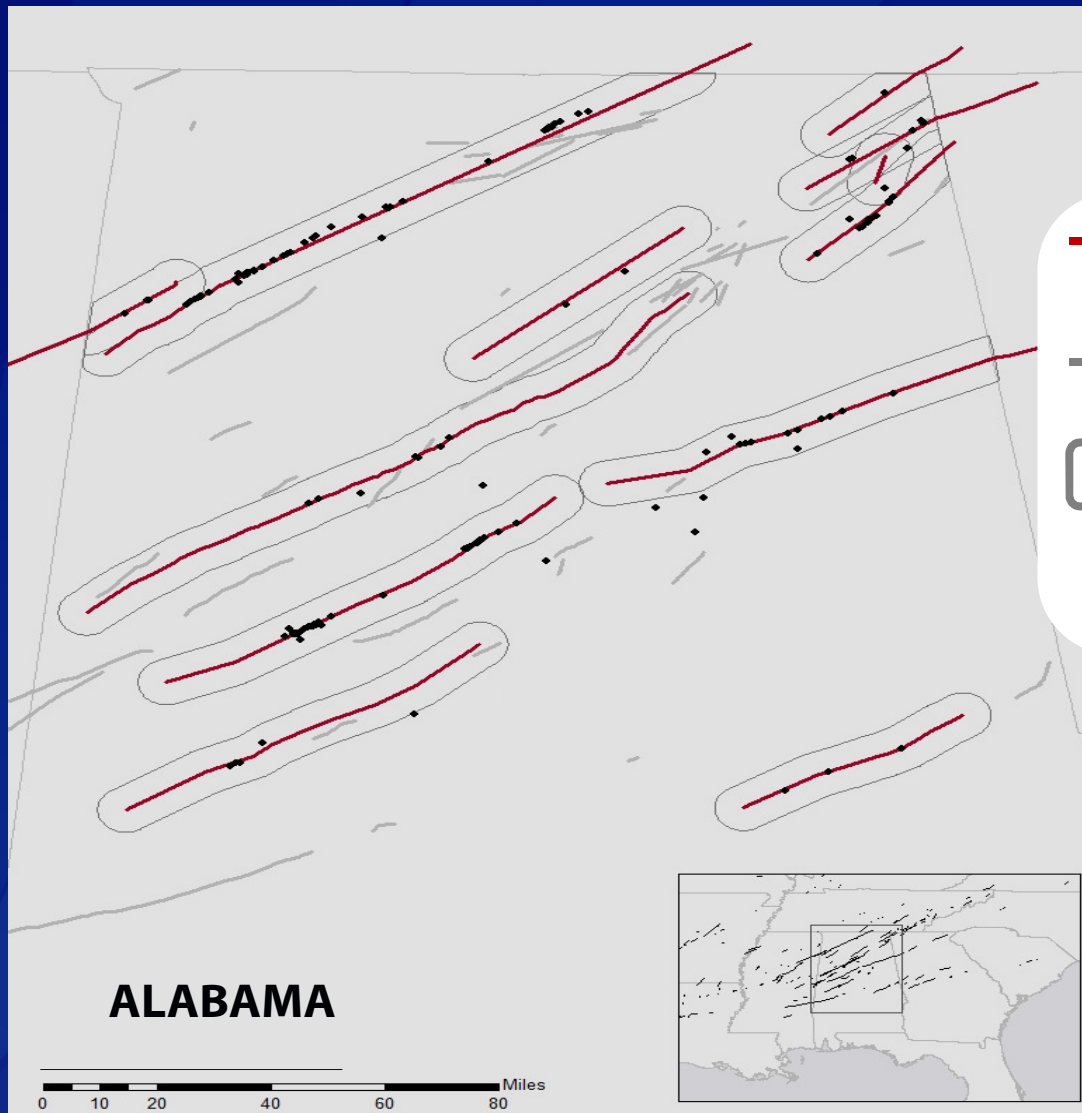
Mortality surveillance
form

Linked to Death Certificates

Identified 247 tornado-related deaths



Deadly tornado tracks and location of deceased



- Deadly tornadoes
- Non-deadly tornadoes
- 5 miles radius
- Fatalities

Summary of Mortality Study Key Findings

- ❑ 247 fatalities were identified**
- ❑ Females and older adults were at highest risk for tornado-related deaths**
- ❑ Most deaths were directly related to the tornadoes, on scene and trauma-related**
- ❑ Majority were indoors in single family homes**
- ❑ Word of mouth was the most common warning mechanism**

Comments

- ❑ **ICT leadership overcame enormous logistical and resource challenges**
- ❑ **Successful deployment of CDC staff in field**
- ❑ **Improved collaboration – improved timeliness**
- ❑ **Limitations**
 - Complexity of tracking teams and form completion
 - Difficulty in classifying mechanism and cause (i.e., crush vs. struck by an object)



Thank You



National Center for Environmental Health
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Recommendations

- ❑ Identify and provide local underground community shelters**
- ❑ Investigate cost-benefit of strengthening building codes**
- ❑ Strengthen messaging regarding location of underground community shelters**
- ❑ Encourage word of mouth warning such as “hear a warning, tell a friend”**
- ❑ Encourage and assist personal or family preparedness planning**