



Death Scene Investigation After Natural Disaster or Other Weather-Related Events

A Toolkit

Suggested Citation:

Centers for Disease Control and Prevention (CDC). Death Scene Investigation After Natural Disaster or Other Weather-Related Events Toolkit: First edition. Atlanta (GA): CDC; 2017.

For additional information, please contact:

Centers for Disease Control and Prevention

National Center for Environmental Health

Division of Environmental Hazards and Health Effects

Health Studies Branch

4770 Buford Highway, MS F-60

Chamblee, GA 30341

Phone: + 1 770-488-3410

Acknowledgement

The Death Scene Investigation After Natural Disaster or Other Weather-Related Events Toolkit was developed by the Centers for Disease Control and Prevention, National Center for Environmental Health, Division of Environmental Hazards and Health Effects (DEHHE), Health Studies Branch (HSB) in 2017. DEHHE/HSB acknowledges the following individuals for their collaboration and commitment in the development of this toolkit:

Authors

Sarah Davis Redman, PhD, MPAff; Catharine Q. Fromknecht; Sarah Hodge, MPH; Luciana Rocha; Joanne E. Brady, PhD; Anindita Issa, MD; Kanta Sircar, PhD; Tesfaye Bayleyegn, MD; and Rebecca S. Noe, MN, MPH, FNP-BC.

Contributors

Margaret Warner, PhD; Angela Salazar; Stephanie Poland, MA; Amy Wolkin, DrPH; Carrie K. Shapiro-Mendoza, PhD; Carri Cottengim, MA; and members of the disaster-related death scene workgroup: Carol Braun; Steven Clark, PhD; Gregory G. Davis, MD, MSPH; Mary Dudley, MD, MS, RN; Julie Howe, MBA, D-ABMDI; Kelly Keyes, D-ABMDI; Elias Kontanis, PhD; Kathryn Lane, MPH; Matthew Lunn, MS; Donald Smith; Paul Parker, D-ABMDI; Mary Ann Sens, MD, PhD; Suzanne Utley Bobak, MD; Jason Wiersema, PhD.

Disclaimer

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.

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INTRODUCTION

The Centers for Disease Control and Prevention (CDC) developed this toolkit in collaboration with National Opinion Research Center at the University of Chicago and a workgroup of leading subject matter experts. The toolkit gives death scene investigators and death certifiers a common framework for collecting and documenting disaster-related information. It includes various event-specific data collection tools designed to help death scene investigators investigate deaths that occurred during natural disasters and weather-related events. Information related to the circumstances of disaster or weather-related deaths can provide key information to the medical examiner or coroner as they certify the death. Documenting the disaster-specific data elements identified in the forms and checklists in this toolkit will make it easier to compare mortality data across jurisdictions. Use of these forms and checklists will also increase the ability of public health practitioners to accurately assess the burden of natural disasters, identify risk and protective factors, and develop prevention strategies. The toolkit provides resources that can be adapted and used across different jurisdictions in the United States and its territories.

Through a review of the published and grey literature exploring how death scene data are collected and used to determine whether the death was disaster-related, the authors found considerable variation in the use of death scene data collection tools.¹ This toolkit was developed collaboratively with the medical examiners and coroners, forensic pathologists, death scene investigators, forensic anthropologists, and epidemiologists, who served on the project workgroup, to address the need for more consistent data collection after a disaster. Initial drafts of the tools were developed over a six-month period during workgroup meetings and an in-person workshop. Additional death scene investigators were asked to pilot the forms by conducting a retrospective review of a previous disaster-related death. This toolkit contains the final versions of the tools and has been reviewed by the workgroup members.

Since the 1990s,² CDC has contributed to the development of more consistent approaches for identifying and reporting disaster-related deaths. This toolkit focuses on providing resources for death scene investigators to help them with investigations after a natural disaster or weather-related event. Another effort is under way to develop guidelines for death certifiers to improve consistency of information included in the death certificate for deaths directly or indirectly attributed to human-induced disasters as well as natural disasters. Ultimately, both the toolkit and guidelines for death certifiers will contribute to efforts to improve data quality and enhance reporting of deaths after a disaster and through electronic death registration systems (EDRS).

¹ Rocha LA, Fromknecht CQ, Redman SD, Brady JE, Hodge SE, Noe RS. Medicolegal death scene investigations after natural disaster- and weather-related events: a review of the literature. *Acad Forensic Pathol.* 2017; 7(2):221-239.

² Combs DL, Quenemoen LE, Parrish RG, Davis JH. Assessing disaster-attributed mortality: development and application of a definition and classification matrix. *International Journal of Epidemiology* 1999;28(6):1124-9

INVESTIGATION AFTER NATURAL DISASTER OR OTHER WEATHER-RELATED EVENTS

A disaster is defined as a serious disruption of the functioning of society, causing widespread human, material, or environmental losses that exceed the local capacity to respond and resulting in calls for external assistance.³ Although disasters can be human-induced incidents, this toolkit focuses on natural disasters, including both hydrometeorological (e.g. tornadoes, hurricanes) and geological (e.g. earthquakes), as well as weather-related events like snowstorms, heat waves, and lightning.

Like any death, data collected at the death scene are the foundation for identifying the cause and manner of death. Official sources of disaster mortality data might include the following:

- Public health and vital statistics departments
- The Federal Emergency Management Agency (FEMA) funeral benefit claims database
- The American Red Cross' mortality surveillance system
- The National Oceanic and Atmospheric Administration (NOAA)-National Weather Service (NWS) storm database

However, because of the complexities of a disaster or weather-related event, collecting information beyond what is routinely required for determining cause and manner of death may be needed to ensure that the death is appropriately attributed.

Reviews of death certificates and other sources of mortality data after several natural disasters found differences in the number of disaster-related deaths reported. CDC found considerable disparities between the final number of deaths recorded by the various agencies for the same federally-declared disasters including Hurricane Ike in 2008, the southeastern tornado outbreak in 2011, and Hurricane Sandy in 2012.⁴ Figure 1 illustrates the differences.

³ United Nations. 2009 United Nations International Strategy for Disaster Reduction (UNISDR) Terminology on Disaster Reduction. Available from: http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf.

⁴ Howland R, Baker K, Donald CM, Noe RS, Warner M. Using electronic death registration systems (EDRS) to conduct "real-time" disaster mortality surveillance. Presented for the Council of State and Territorial Epidemiologists; 2014. <http://www.cste.org/group/DisasterEpi>

Figure 1. Example of differences in number of disaster-related deaths reported by response agencies in Texas, Georgia, and New Jersey

| Disaster | Number of deaths, by reporting agency | | | | |
|-----------------------------------|---------------------------------------|------|---------------------|------------------------|-------------------------------------|
| | Red Cross | FEMA | NOAA–NWS storm data | Other agency (EOC, ME) | Vital statistics (Search w/o names) |
| Hurricane Ike Texas (2009) | 38 | 104 | 20 | 74 | 4 |
| April 27 Tornado Georgia (2011) | 15 | 9 | 15 | 15 | 6 |
| Hurricane Sandy New Jersey (2012) | 34 | 61* | 12 | 75 | 24 |

FEMA = Federal Emergency Management Agency; NOAA–NWS = National Oceanic and Atmospheric Administration–National Weather Service; EOC = emergency operations center; ME = medical examiner.

* Actual number of benefit claims that required state medical examiner review.

Improving data collection practices at the scene can help local and state officials to better target response and recovery efforts, especially if ongoing hazards are affecting the area. For example, during a disaster event, the number of fatalities determine if a request for a Disaster Mortuary Operational Response Team (DMORT) or mutual aid is warranted.

Disaster-specific or weather-specific data collected might include activity at the time of death, whether the decedent was aware of the disaster, and whether the decedent attempted to take safety measures. Ideally, the data collected, whether through completion of the supplemental forms or as part of the investigator’s narrative, will become part of the medical examiner or coroner report and can be shared with local and state public health officials on request. Such information can help public health officials develop prevention strategies for future disaster response planning. By documenting and raising awareness of risks associated with certain types of disasters, we can potentially prevent unnecessary deaths through refinement of strategies to prepare for, respond to, and recover from future disasters.

WHAT'S INCLUDED IN THIS TOOLKIT?

This toolkit provides guidance for investigators as they investigate disaster or weather-related deaths. The two main tools are event-specific supplemental forms and checklists. These tools are designed to prompt investigators to collect additional specific information that is often available only immediately after the event. Investigators can use whichever tool is more useful and easily integrated into their existing death scene investigation processes. The forms and checklists for a specific type of disaster or weather-related event were designed to capture the same information, but in two different modes.

Event-Specific Supplemental Forms

Many jurisdictions have death scene investigation forms and tools. The event-specific supplemental forms in the toolkit are designed to be used along with any jurisdiction's standard operating procedures. They are designed to be easy to use, with little or no duplication of effort (i.e., completing forms that ask the same questions), and without interrupting established approaches to investigating deaths (i.e., by introducing a new stand-alone form unfamiliar to the investigator).

The forms are designed to capture data relevant to various circumstances during a specific disaster or weather-related event. For ease of use, the forms are structured such that investigators only complete relevant sections. Instructions on the forms direct investigators to the appropriate sections.

The forms can be used in various ways and formats. Investigators can complete the forms in the field or when they complete their investigation after going on site. The forms can be used in hard copy or electronically as fillable PDFs. Additionally, some jurisdictions may choose to integrate the questions from the forms into their existing electronic data collection systems.

Information from the forms can be shared with the medical examiner or coroner in different ways, as determined by the jurisdiction. These forms can be easily appended to the investigator's report or information from the forms could be incorporated into the investigator's narrative.

Checklists

The checklists are designed to be a quick reference guide for investigators to highlight key data elements that could be helpful for confirming whether a death is directly or indirectly related to a natural disaster or weather-related event. The checklists provide a list of key disaster-related data elements in an easy-to-read list.

The checklists can be used in multiple ways. Investigators can review the list before they begin their investigation to remind them of important data elements to collect or take it to the field for reference. When extreme weather is in the forecast, supervisors could also include the checklists in email communications related to preparing for that upcoming storm or event. The data collected for each of the elements on the checklist would be included in the investigator's narrative report.

Figure 2 illustrates the differences and similarities between the two resources.

Figure 2. Uses of forms and checklists

| Application | Use | Form | Checklist |
|-----------------|---------------------------------|------|-----------|
| When to use | Before the scene | | X |
| | At the scene | X | X |
| | After the scene | X | X |
| Where to report | Data included in narrative | X | X |
| | Appended to investigator report | X | |

Other resources: Other resources provide additional context and information about disaster-related deaths.

- **Glossary:** This glossary provides definitions for disaster- and weather-related terms found in the toolkit.
- **Data sources:** This list of data sources provides information about potential sources of disaster- and weather-specific information.

Resource A:
**SUPPLEMENTAL FORMS
AND CHECKLISTS BY EVENT**

1 DECEDENT PERSONAL DETAILS

Last Name:

First Name:

Sex:

Male Female

Law Enforcement Case Number (if available):

ME/C Case Number (if available):

Law Enforcement Agency (if applicable):

Date of Birth:

MM

DD

YYYY

Date of Death: Estimated Found Known

MM

DD

YYYY

Location of Injury (physical address, including ZIP code):

2 LOCATION OF THE DECEDENT

Was the decedent found **INDOORS**? Yes No → Go to Section 3: Information about Circumstances of Death

In what part of residence or building was the decedent found?

What was the structure made of? Brick Wood Unknown Other (*Describe*)

Describe condition of the structure where the decedent was found (e.g., disrepair):

Was the electrical power on? Yes No Unknown

If **NO**, estimate duration of power outage: Hours Days

What was the cause of the power outage?

- Storm/weather conditions (including extreme heat)
- Rolling blackout
- Power disconnected by power company
- Structure not wired for power
- Unknown
- Other, *describe*

3 INFORMATION ABOUT CIRCUMSTANCES OF DEATH

Does the cause of death appear to be due to any of the following?

Select all potential causes of death. Complete all corresponding sections, THEN go to Section 6.

- Excessive Exposure to Environmental Heat or Hyperthermia → Complete Section 4: Environmental Heat Questions
 Other (e.g., exacerbation of chronic diseases) → Complete Section 5: Other Non-Injury Causes Questions

4 EXCESSIVE EXPOSURE TO ENVIRONMENTAL HEAT OR HYPERTHERMIA QUESTIONS

If the decedent was found or exposed **INDOORS**:

- A. Were the following items in the room where the decedent was found?
 B. If present, was the item in working condition?
 C. If present and working, was the item on?

| | A. Present? | B. Working? | C. On? |
|-----------------------------|---|---|---|
| Central air conditioner | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Window unit air conditioner | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Evaporative/swamp cooler | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Ceiling fan | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Other fan | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |

Were the windows of the room the decedent was in:

- Open Closed Unknown Other

Describe:

If the decedent was found **OUTDOORS**:

Was the decedent near a structure that could provide shade, water, and/or cooler temperatures?

- Yes No Unknown

Describe circumstances:

5 OTHER NON-INJURY CAUSES QUESTIONS

Describe circumstances surrounding this non-injury death. Check all that apply:

Lack of access to durable medical equipment (e.g., home oxygen) (Describe)

Exacerbation of chronic disease (Describe)

Vulnerable health status (e.g., 85+ years old, dementia) (Describe)

Other, describe

6 INFORMATION ABOUT THE DECEDENT

Was the decedent incapacitated? Yes No Unknown

If yes, how?

Is there a previous history of heat illness? Yes No Unknown

If yes, describe:

If died at hospital, then what was admission body temperature or EMS temperature?

Date/Time:

Source:

Before death, was the decedent engaged in any of the below activities?

If YES, describe:

Sitting in a vehicle?

Yes No Unknown

Exercising or participating in sports outside?

Yes No Unknown

Working outside (occupational)?

Yes No Unknown

Engaging in other outside activity (non-occupational)?

Yes No Unknown

How long was the decedent engaging in these activities outdoors?

Was there evidence of water consumption? Yes No Unknown

If yes, explain:

Did the decedent live alone?

Yes No Unknown

Was the decedent known to receive home visiting services?

Yes No Unknown

Was the decedent homeless?

Yes No Unknown

7 EXTREME HEAT INFORMATION

Document the weather conditions for the previous 72 hours before the estimated time of death in ZIP code for the location of injury. Excessive heat for more than 3 days is a risk factor for heat-related deaths especially if temperatures do not cool down during the night.

(Source: local emergency manager or National Weather Service)

Document weather conditions AT TIME when body is found (e.g., temperature, clear, windy, cloudy):

Was extreme heat (e.g., heat wave in your region) affecting the area at the scene of the injury or death?

Yes No Unknown

Was there a heat watch, warning, or alert in the PREVIOUS 72 HOURS where the incident occurred?

Yes No Unknown

Was the decedent aware of the extreme weather conditions/heat warnings?

Yes No Unknown

Describe:

8 DATA SOURCES

What data sources were used to complete this form? (check all that apply)

- Law enforcement records and/or interviews
- EMS run sheets and/or interviews
- Hospital or Emergency Department records and/or interviews
- Past medical records
- Mental health records
- Substance abuse treatment records
- Online media (e.g., newspaper reports, weather details)
- Local Emergency Manager(s) interviews
- Local staff at NWS Weather Forecast Office interviews
- Other interviews, *specify with whom:*

Other, *specify:*

Form completed by

Name/contact information:

Date:

- Weather conditions — previous 72 hours and at the time the body is found
- Whether location of the death scene was under a heat watch, warning, or alert within the past 72 hours
- Presence of equipment to mitigate weather conditions (e.g., air conditioner, fan), AND whether they were used
- Power outages
- Previous history of heat illness
- Engagement in activities outside in extreme heat
- Evidence of water consumption
- Whether decedent was homeless
- Decedent awareness of heat-related warnings

Death Scene Investigation Supplement **WINTER WEATHER**

1 DECEDENT PERSONAL DETAILS

Last Name:

First Name:

Sex:

Male Female

Law Enforcement Case Number (if available):

ME/C Case Number (if available):

Law Enforcement Agency (if applicable):

Date of Birth:

MM

DD

YYYY

Date of Death: Estimated Found Known

MM

DD

YYYY

Location of Injury (physical address, including ZIP code):

2 LOCATION OF THE DECEDENT

Was the decedent found **INDOORS**? Yes No → Go to Section 3: Information about Circumstances of Death

In what part of residence or building was the decedent found?

What was the structure constructed from? Brick Wood Unknown Other (*Describe*)

Describe condition of the structure where the decedent was found (e.g., disrepair):

Was the electrical power on? Yes No Unknown

If **NO**, estimate duration of power outage: Hours Days

What was the cause of the power outage?

- Storm/weather conditions
 Rolling blackout
 Power disconnected by power company
 Structure not wired for power
 Unknown
 Other, *describe*

3 INFORMATION ABOUT CIRCUMSTANCES OF DEATH

Does the cause of death appear to be due to any of the following?

Select all potential causes of death. Complete all corresponding sections, THEN go to Section 9.

- Excessive Exposure to Cold Temperatures or Hypothermia → Complete Section 4: Excessive Exposure Questions
- Motor Vehicle Crash → Complete Section 5: Motor Vehicle Crash Questions
- Carbon Monoxide Poisoning → Complete Section 6: Carbon Monoxide Exposure Questions
- Injury – Struck by (e.g., impaled by object)/Blunt force/Burns/Smoke inhalation → Complete Section 7: Injury Questions
- Other (e.g., exacerbation of chronic diseases) → Complete Section 8: Other Non-Injury Cause Questions

4 EXCESSIVE EXPOSURE TO COLD TEMPERATURES OR HYPOTHERMIA QUESTIONS

If the decedent was found **INDOORS**:

- A. Were the following items in the room where the decedent was found?
- B. If present, was the item in working condition?
- C. If present and working, was the item on?

| | A. Present? | B. Working? | C. On? |
|--|---|---|---|
| Heater (furnace) | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Space heater | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Other heating device (portable heater) | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes → <input type="checkbox"/> No STOP <input type="checkbox"/> Unknown STOP | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |

Were the windows:

- Closed
- Open
- Unknown

If the decedent was found **OUTDOORS**: Was the decedent near a structure that could provide shelter from the weather conditions and/or warmer temperatures?

- Yes
- No
- Unknown

Describe:

5 MOTOR VEHICLE CRASH QUESTIONS

Describe the motor vehicle crash:

Did the vehicle run off road or crash due to snow, ice, or other winter weather condition?

- Yes
- No
- Unknown

Did the vehicle run into or get struck by debris (e.g., falling trees)?

- Yes
- No
- Unknown

Was the decedent going to or coming from work at time of injury?

- Yes
- No
- Unknown

Was the decedent performing occupation-related work at the time of injury?

- Yes
- No
- Unknown

Was the decedent working on the response or recovery?

- Yes
- No
- Unknown

6 CARBON MONOXIDE EXPOSURE QUESTIONS

Describe evidence and circumstance(s) of suspected CO exposure:

CO Measurements

Was the structure checked for presence of CO?

- Yes →
 No **STOP**
 Unknown **STOP**

Were environmental measurements of CO taken?

- Yes →
 No **STOP**
 Unknown **STOP**

CO level (ppm)

Who took the measurement? (e.g., Fire, Police)

Date/time taken?

CO Alarm

Was there a CO alarm present?

- Yes →
 No **STOP**
 Unknown **STOP**

Working?

- Yes →
 No **STOP**
 Unknown **STOP**

Did it go off?

- Yes
 No
 Unknown

Where was the CO alarm in relation to the decedent?

Were there reports of fire or smoke? Yes No Unknown

Were any of the following potential sources present (check all that apply)?
If yes, note distance between potential source of CO or fire and decedent:

Heat source (boilers, furnace): (ft.)

Kerosene or gas space heater: (ft.)

Generator (close to or inside): (ft.)

Grill meant for outdoor use: (ft.)

Lawnmower: (ft.)

Power washer: (ft.)

Major appliance: (ft.)

Specify type:

6 CARBON MONOXIDE EXPOSURE QUESTIONS (CONTINUED.)

Motor vehicle. If yes:

Was the vehicle in an enclosed space?

Yes No Unknown

Was the ignition on?

Yes No Unknown

Was the battery dead?

Yes No Unknown

Was the gas tank empty?

Yes No Unknown

Was the vehicle locked?

Yes No Unknown

Is there remote start?

Yes No Unknown

Was there keyless ignition?

Yes No Unknown

Were any hoses/apparatus present?

Yes No Unknown

Was anything blocking the tailpipe?

Yes No Unknown

Was there exhaust present or reported to be in the space?

Yes No Unknown

Other potential source, *describe*

7 INJURY QUESTIONS

How did the injury occur? Check all that apply:

Fall, slip, trip (*Specify*)

From height (*Describe*)

Same level (*Describe*)

Hit by or struck against (*Describe*)

Crushed (*Describe*)

Asphyxia (*Describe*)

Cut/laceration/impaled (*Describe*)

Electric current or burn (*Describe*)

Burn and/or smoke inhalation (*Describe*)

Carbon monoxide exposure (*If yes, complete Section 6: Carbon Monoxide Exposure Questions*)

Motor vehicle crash (*If yes, complete Section 5: Motor Vehicle Crash Questions*)

Other, *describe*

8 OTHER NON-INJURY CAUSES QUESTIONS

Describe circumstances surrounding this non-injury death. Check all that apply:

Lack of access to durable medical equipment (e.g., home oxygen) (Describe)

Lack of access to life-saving medical care (e.g., dialysis) (Describe)

Exacerbation of chronic disease (Describe)

Vulnerable health status (e.g., 85+ years old, dementia) (Describe)

Other, describe

9 INFORMATION ABOUT THE DECEDENT

Was the decedent incapacitated? Yes No Unknown

If yes, how?

Before death, was the decedent engaged in any of the below activities?

If YES, describe:

Exercising outside?

Yes No Unknown

Working outside (occupational)?

Yes No Unknown

Engaging in other outside activity (non-occupational)?

Yes No Unknown

Engaging in removing snow?

Yes No Unknown

Immersed in water?

Yes No Unknown

How long was the decedent engaging in these activities outdoors?

Description of clothing, including materials:

Was clothing appropriate for the conditions? Yes No Unknown

Is clothing wet/damp? Yes No Unknown

Is there evidence of undressing? Yes No Unknown

Did the decedent live alone? Yes No Unknown

Was the decedent homeless? Yes No Unknown

10 STORM INFORMATION

Document the weather conditions for the previous 24 hours before the estimated time of death in ZIP code for the location of injury:
(Source: local emergency manager or National Weather Service)

Was the snow or ice storm or other winter weather conditions affecting the area at the scene of the injury or death?

Yes No Unknown

Name of storm, if applicable:

Was there a declared state of emergency and/or federal declaration? Yes No Unknown

As you close this case, did you see evidence that the death was related to:

- The direct force of the winter weather or the storm?
 An unsafe environment caused by the winter weather or the storm?
 Actions taken by the decedent during the winter weather or the storm?

If YES to any of the above, describe:

11 DATA SOURCES

What data sources were used to complete this form? (check all that apply)

- Law enforcement records and/or interviews
 EMS run sheets and/or interviews
 Hospital or Emergency Department records and/or interviews
 Past medical records
 Mental health records
 Substance abuse treatment records
 Online media (e.g., newspaper reports, weather details)
 Local Emergency Manager(s) interviews
 Local staff at NWS Weather Forecast Office interviews
 Other interviews, *specify with whom:*

Other, *specify:*

Form completed by

Name/contact information:

Date:

- Weather conditions — previous 24 hours
- Name of storm or event, if applicable
- Whether the location of the death scene was under state of emergency and/or federal declaration
- Whether the location of the death scene was affected by snow, ice, or other winter weather conditions
- Power outages
- Use of a generator or other potential sources of carbon monoxide
- Presence of equipment to mitigate weather conditions (e.g., heater) and whether they were used
- If motor vehicle accident, were road conditions affected by winter weather conditions
- Whether decedent was homeless
- Appropriateness of clothing for the conditions/evidence of undressing
- Engagement in activities related to storm clean up
- Engagement in activities outside in weather conditions
- Whether decedent was part of response or recovery efforts

1 DECEDENT PERSONAL DETAILS

Last Name:

First Name:

Sex:

Male Female

Law Enforcement Case Number (if available):

ME/C Case Number (if available):

Law Enforcement Agency (if applicable):

Date of Birth:

MM

DD

YYYY

Date of Death: Estimated Found Known

MM

DD

YYYY

Location of Injury (physical address, including ZIP code):

2 LOCATION OF THE DECEDENT

Was the decedent found **INDOORS**?

Yes No → *Complete 2A: OUTDOORS*

Was the decedent found in a basement?

Yes No Unknown

Was the decedent found in a tornado shelter?

Yes No Unknown

Was the decedent found in the center of the structure (e.g., away from windows or doors)?

Yes No Unknown

If none of the above, in what part of residence or building was the decedent found?

Specify the structure:

- Single family house detached from any other house
- Single family house attached to one or more houses
- Condo/apartment with less than 7 stories
- Condo/apartment with 7 or more stories
- Mobile home
- School/Workplace/Business
- Unknown
- Other, *describe*

Is a basement present in the structure?

Yes No Unknown

Is a tornado shelter present in the structure?

Yes No Unknown

Describe any damage to the structure:

2A OUTDOORS

Was the decedent found OUTDOORS?

Yes No → Complete Section 3: Information about Circumstances of Death

Was the person near a structure that could have provided some shelter?

Yes No

Describe this shelter (e.g., structurally sound buildings, underground shelter):

Any evidence the person was previously in a:

Structure? Yes No Unknown

Vehicle? Yes No Unknown

3 INFORMATION ABOUT CIRCUMSTANCES OF DEATH

Does the cause of death appear to be due to any of the following?

Select all potential causes of death. Complete all corresponding sections, THEN go to Section 8.

Traumatic Injury – Struck by (e.g., impaled by object)/Blunt force/Crushed/Burns → Complete Section 4: Injury Questions

Motor Vehicle Crash → Complete Section 5: Motor Vehicle Crash Questions

Drowning → Complete Section 6: Drowning Questions

Other (e.g., exacerbation of chronic diseases) → Complete Section 7: Other Non-Injury Causes Questions

4 INJURY QUESTIONS

How did the injury occur? Check all that apply

Crushed, describe

Asphyxia, describe

Hit by or struck against, describe

Cut/laceration/impaled, describe

Fall, slip, trip, specify

From height, describe

Same level, describe

Motor vehicle crash → If YES, complete Section 5: Motor Vehicle Crash Questions

Burn and/or smoke inhalation, describe (include if working fire detector in location)

Electric current or burn, describe

Other, describe

5 MOTOR VEHICLE CRASH QUESTIONS

Describe the motor vehicle crash:

- Any evidence the decedent exited the vehicle intentionally? Yes No Unknown
- Was the vehicle directly struck by the tornado? Yes No Unknown
- Was the vehicle struck by flying projectile(s) or debris? (e.g., falling trees) Yes No Unknown
- Was the person ejected or sucked out of the vehicle? Yes No Unknown
- Was the decedent going to or coming from work at time of injury? Yes No Unknown
- Was the decedent performing occupation-related work at the time of injury? Yes No Unknown
- Was the decedent working on the response or recovery? Yes No Unknown

6 DROWNING QUESTIONS

Describe evidence of drowning:

What type of flood conditions?

- Heavy rain with tornado caused rain water to accumulate quickly
- Other, describe

Was the decedent engaging in any of the following activities? (check all that apply)

- Driving (e.g., on wet or flooded roadways)
- Exited vehicle to seek shelter from tornado
- Attempting to rescue another from water
- Other, describe:

7 OTHER NON-INJURY CAUSES QUESTIONS

Describe circumstances surrounding this non-injury death. Check all that apply:

- Lack of access to durable medical equipment (e.g., home oxygen) (Describe)
- Lack of access to life-saving medical care (e.g., dialysis) (Describe)
- Exacerbation of chronic disease (Describe)
- Vulnerable health status (e.g., 85+ years old, dementia) (Describe)
- Other, describe

8 INFORMATION ABOUT THE DECEDENT

Was the decedent incapacitated? Yes No Unknown

If yes, how?

Before death, was the decedent engaged in any of the below activities?

If YES, describe:

Activities related to storm preparation?

Yes No Unknown

Attempting to flee the tornado?

Yes No Unknown

Attempting to seek shelter?

Yes No Unknown

Activities related to storm clean up?

Yes No Unknown

9 DISASTER SPECIFIC INFORMATION

Document the weather conditions for the tornado in ZIP code for the location of injury:

(Source: local emergency manager or national weather service)

Was the tornado affecting the area at the scene of the injury or death?

Yes No Unknown

What was the tornado strength nearest to the victim:

EF-1 EF-2 EF-3 EF-4 EF-5

Name of tornado(es), if applicable (e.g., Joplin tornadoes):

Was there a declared state of emergency and/or federal declaration?

Yes No Unknown

Was the location where the decedent was injured or found under a tornado watch or tornado warning?

Yes No Unknown

Was there a tornado siren in the area?

Yes No Unknown

Was the decedent aware of the tornado warning or watch?

Yes No Unknown

If yes, what methods (e.g. siren, word of mouth)

As you close this case, did you see evidence that the death was related to:

The direct force of the tornado?

An unsafe environment caused by the tornado?

Actions taken by the decedent during or after the tornado?

If YES to any of the above, describe:

10 DATA SOURCES

What data sources were used to complete this form? (check all that apply)

- Law enforcement records and/or interviews
- EMS run sheets and /or interviews
- Hospital or Emergency Department records and /or interviews
- Past medical records
- Mental health records
- Substance abuse treatment records
- Online media (e.g., newspaper reports, weather details)
- Local Emergency Manager(s) interviews
- Local staff at NWS Weather Forecast Office interviews
- Other interviews, *specify with whom:*

Other, *specify:*

Form completed by

Name/contact information:

Date:

- Tornado strength and additional weather conditions (e.g., severe thunderstorms, flash flooding)
- Name of storm or event, if applicable (e.g., Joplin tornado)
- Whether the location of the scene was under tornado watch or tornado warning
- Whether the location of the scene was under state of emergency or federal declaration
- Characteristics of the scene that could protect against effects of storm (e.g., presence of a basement, storm shelter, or specially built tornado “safe room” or community shelter)
- If motor vehicle accident:
 - Evidence the decedent exited vehicle intentionally
 - Evidence the decedent was ejected from or sucked out of vehicle
 - Evidence the vehicle was struck by the tornado, projectiles, or debris
- Engagement in activities related to storm clean up
- Whether there was a tornado siren in the area of the scene
- Whether decedent moved to position of safety (e.g., basement or tornado shelter)
- Whether decedent was attempting to seek shelter or flee tornado
- Whether decedent was aware of a tornado watch or warning

Death Scene Investigation Supplement **HURRICANE**

1 DECEDENT PERSONAL DETAILS

Last Name:

First Name:

Sex:

Male Female

Law Enforcement Case Number (if available):

ME/C Case Number (if available):

Law Enforcement Agency (if applicable):

Date of Birth:

MM

DD

YYYY

Date of Death: Estimated Found Known

MM

DD

YYYY

Location of Injury (physical address, including ZIP code):

2 LOCATION OF THE DECEDENT

Was the decedent found **INDOORS**? Yes No → Go to Section 3: Information about Circumstances of Death

In what part of residence or building was the decedent found?

Was the electrical power on? Yes No Unknown

If **NO**, estimate duration of power outage: Hours or Days

What was the cause of the power outage?

- Storm/weather conditions
- Rolling blackout
- Power disconnected by power company
- Structure not wired for power
- Unknown
- Other, *describe*

3 INFORMATION ABOUT CIRCUMSTANCES OF DEATH

Does the cause of death appear to be due to any of the following?

Select all potential causes of death. Complete all corresponding sections, THEN go to Section 9.

- Drowning → Complete Section 4: Drowning Questions
- Motor Vehicle Crash → Complete Section 5: Motor Vehicle Crash Questions
- Carbon Monoxide Poisoning → Complete Section 6: Carbon Monoxide Exposure Questions
- Injury – Struck by (e.g., impaled by object)/Blunt force/Burns → Complete Section 7: Injury Questions
- Other (e.g., exacerbation of chronic diseases) → Complete Section 8: Other Non-Injury Causes Questions

4 DROWNING QUESTIONS

Describe evidence of drowning:

How did the injury occur?

- Storm surge -abnormal rise in water level in coastal areas above regular tides; caused by forces generated from severe storm winds, waves, or coinciding with high tide
- Coastal flood—very high coastal tides from heavy rainfall and onshore winds
- Inland flooding—moderate precipitation over several days, intense rainfall over short period of time, or river overflow because of ice or debris jam or levee failure
- Flash flood—caused from heavy rainfall in a short time period (<6 hours) characterized by powerful torrents of water from rivers, across roads, or mountain canyons. Dam or levee failure can lead to flash floods.
- River floods—water level rises over top of river banks—from heavy rain fall
- Other, *describe*

Describe water current at estimated time of injury:

- Strong Moderate Weak Unknown N/A

Water temperature:

 °F or °C

Was the decedent engaging in any of the following activities? (Check all that apply)

- Driving (e.g., on wet or flooded roadways)
- Sheltering in place either in home/business
- Swimming/surfing (e.g., in pre- or post-hurricane ocean waves)
- Fishing/playing/wading/walking (e.g., near high water on boardwalks, beaches or flooded rivers)
- Attempting to rescue another from water
- Other, *describe*

Was the decedent that drowned driving/riding in a motor vehicle?

- Yes No Unknown

Was the decedent that drowned driving/riding in a water craft?

- Yes No Unknown

If YES to either of the above:

Did the vehicle enter flood water?

- Yes No Unknown

Did the vehicle enter an area beyond a “warning barrier”?

- Yes No Unknown

Was the decedent going to work at time of injury/death?

- Yes No Unknown

Was the decedent working on the response or recovery?

- Yes No Unknown

Was the decedent working (not part of the response) at time of injury/death?

- Yes No Unknown

5 MOTOR VEHICLE CRASH QUESTIONS

Describe the motor vehicle crash:

Did the vehicle run into or get struck by debris (e.g., falling trees)? Yes No Unknown

Did the vehicle enter an area beyond a barrier? Yes No Unknown

Was the decedent going to or coming from work at time of injury? Yes No Unknown

Was the decedent performing occupation-related work at the time of injury? Yes No Unknown

Was the decedent working on the response or recovery? Yes No Unknown

6 CARBON MONOXIDE EXPOSURE QUESTIONS

Describe evidence and circumstance(s) of suspected CO exposure:

CO Measurements

Was the structure checked for presence of CO?

Yes →

No **STOP**

Unknown **STOP**

Were environmental measurements of CO taken?

Yes →

No **STOP**

Unknown **STOP**

CO level (ppm)

Who took the measurement? (e.g., Fire, Police)

Date/time taken?

CO Alarm

Was there a CO alarm present?

Yes →

No **STOP**

Unknown **STOP**

Working?

Yes →

No **STOP**

Unknown **STOP**

Did it go off?

Yes

No

Unknown

Where was the CO alarm in relation to the decedent?

Were there reports of fire or smoke? Yes No Unknown

Were any of the following potential sources present (check all that apply)?

If yes, note distance between potential source of CO or fire and decedent:

Heat source (boilers, furnace): (ft.)

Kerosene or gas space heater: (ft.)

Generator (close to or inside): (ft.)

Grill meant for outdoor use: (ft.)

Power washer: (ft.)

Major appliance: (ft.)

Specify type:

6 CARBON MONOXIDE EXPOSURE QUESTIONS (CONTINUED.)

Motor vehicle. If yes:

Was the vehicle in an enclosed space?

Yes No Unknown

Was the ignition on?

Yes No Unknown

Was the battery dead?

Yes No Unknown

Was the vehicle locked?

Yes No Unknown

Is there remote start?

Yes No Unknown

Was there keyless ignition?

Yes No Unknown

Were any hoses/apparatus present?

Yes No Unknown

Was anything blocking the tailpipe?

Yes No Unknown

Was there exhaust present or reported to be in the space?

Yes No Unknown

Other potential source, *describe*

7 INJURY QUESTIONS

How did the injury occur? Check all that apply:

Submersion in flood water (*If yes, complete Section 4: Drowning Questions*)

Motor vehicle crash (*If yes, complete Section 5: Motor Vehicle Crash Questions*)

Hit by or struck against (*Describe*)

Crushed (*Describe*)

Asphyxia (*Describe*)

Cut/laceration/impaled (*Describe*)

Carbon monoxide exposure (*If yes, complete Section 6: Carbon Monoxide Exposure Questions*)

Fall, slip, trip (*Specify*)

Hit by or struck against (*Describe*)

Crushed (*Describe*)

Electric current or burn (*Describe*)

Burn and/or smoke inhalation (*Describe*)

Other, *describe*

8 OTHER NON-INJURY CAUSES QUESTIONS

Describe circumstances surrounding this non-injury death. Check all that apply:

Lack of access to durable medical equipment (e.g., home oxygen) *(Describe)*

Lack of access to life-saving medical care (e.g., dialysis) *(Describe)*

Exacerbation of chronic disease *(Describe)*

Vulnerable health status (e.g., 85+ years old, dementia) *(Describe)*

Other, *describe*

9 INFORMATION ABOUT THE DECEDENT

Was the decedent incapacitated? Yes No Unknown

If yes, how?

Any suspicion this could be a suicide? Explain.

Was there a suicide note present at the scene? Yes No Unknown

Before death, was the decedent engaged in any of the below activities?

If YES, describe:

Activities related to storm preparation?

Yes No Unknown

Attempting to move out of the path of the storm?

Yes No Unknown

Sheltering in place at home/business?

Yes No Unknown

Activities related to storm clean up?

Yes No Unknown

10 DISASTER SPECIFIC INFORMATION

Document the weather conditions in ZIP code for the location of injury:

(Source: local emergency manager or National Weather Service)

Was the hurricane affecting the scene of injury or death? Yes No Unknown

What was the hurricane strength nearest to the victim:

Category 1 Category 2 Category 3 Category 4 Category 5

Name of storm, if applicable (e.g., Hurricane Sandy):

Was there a declared state of emergency and/or federal declaration?

Yes No Unknown

Was the decedent's residence under a mandatory evacuation order?

Yes No Unknown

Was the decedent aware of the mandatory evacuation order?

Yes No Unknown

As you close this case, did you see evidence that the death was related to:

- The direct force of the storm?
- An unsafe environment caused by the storm?
- Actions taken by the decedent during or after the hurricane?

If YES to any of the above, describe:

11 DATA SOURCES

What data sources were used to complete this form? (check all that apply)

- Law enforcement records and/or interviews
- EMS run sheets and /or interviews
- Hospital or Emergency Department records and /or interviews
- Past medical records
- Mental health records
- Substance abuse treatment records
- Online media (e.g., newspaper reports, weather details)
- Local Emergency Manager(s) interviews
- Local staff at NWS Weather Forecast Office interviews
- Other interviews, *specify with whom:*

Other, *specify:*

Form completed by

Name/contact information:

Date:

- Weather conditions and hurricane strength
- Name of storm or event, if applicable
- Whether the location of the death scene was under state of emergency or federal declaration
- Whether the location of the death scene was under an evacuation order
- If motor vehicle accident:
 - Whether road conditions were affected by the storm
 - Evidence the vehicle entered areas beyond a warning barrier
 - Evidence the vehicle was struck by debris
- Power outages
- Use of a generator or other potential sources of carbon monoxide
- Whether the decedent was sheltering in place
- Whether decedent was attempting move out of path of the storm
- Engagement in activities related to storm preparation
- Engagement in activities related to storm clean up

Death Scene Investigation Supplement **THUNDERSTORM/LIGHTNING**

1 DECEDENT PERSONAL DETAILS

Last Name:

First Name:

Sex:

Male Female

Law Enforcement Case Number (if available):

ME/C Case Number (if available):

Law Enforcement Agency (if applicable):

Date of Birth:

MM

DD

YYYY

Date of Death: Estimated Found Known

MM

DD

YYYY

Location of Injury (physical address, including ZIP code):

2 INFORMATION ABOUT CIRCUMSTANCES OF DEATH

Does the cause of death appear to be due to any of the following?

Select all potential causes of death. Complete all corresponding sections, THEN go to Section 8.

- Lightning strike → Complete Section 3: Lightning Strike Questions
- Drowning → Complete Section 4: Drowning Questions
- Motor Vehicle Crash → Complete Section 5: Motor Vehicle Crash Questions
- Injury – Struck by (e.g., impaled by object)/Blunt force/Burns → Complete Section 6: Injury Questions
- Other (e.g., exacerbation of chronic diseases) → Complete Section 7: Other Non-Injury Causes Questions

3 LIGHTNING STRIKE QUESTIONS

Is there any evidence of lightning strike (e.g., entry and exit wounds, Lichtenberg figures)?

Yes No

Is there any environmental evidence of lightning strike?

Yes No Unknown

What type of lightning strike occurred:

- Direct Strike – person physically struck
- Side Flash (or side splash) – taller object struck (e.g., tree) first and victim acts as a “short circuit”
- Ground Current – strike hits ground or other object (garage door) and current pass through ground to victim
- Conduction – metal live after strike can cause indoor deaths (e.g., touching faucet)
- Streamers – parts of large longer strike

3A LIGHTNING STRIKE QUESTIONS: INDOORS

In what part of the residence or building was the person found?

Was the decedent in contact with or near to any of the following in the structure? (check all that apply)

- Water and/or metal fixtures (shower or sink)
- Appliance(s) connected to wall outlet without a surge protector
- Corded phone (aka landline)
- Concrete wall embedded with rebar or other metal support
- Near a window, door, or porch

3B LIGHTNING STRIKE QUESTIONS: OUTDOORS

Was the body near a body of water:

- Yes
- No
- Unknown

If yes, describe:

Was the body near any tall isolated objects:

- Yes
- No

If YES, check one

- Trees
- Flagpole
- Light or telephone poles
- Field goal posts
- Other (describe):

Was the body near any wide open areas:

- Yes
- No

If YES, check one

- Sports field
- Farm field
- Hiking trails
- Other (describe):

Was the body near any unprotected buildings:

- Yes
- No

If YES, check one

- Picnic pavilion/Baseball dugout/Bus stop shelter
- Car ports/Open garages
- Covered patios/Porches
- Other (describe):

Was the body near any metal:

- Fence/Bleachers
- Tools/Lawn mower
- Golf clubs
- Other (describe):

4 DROWNING QUESTIONS

Describe evidence of drowning:

What type of flood conditions?

- Storm surge – abnormal rise in water level in coastal areas above regular tides; caused by forces generated from severe storm winds, waves, or coinciding with high tide.
- Coastal flood – very high coastal tides from heavy rainfall and onshore winds.
- Inland flooding – moderate precipitation accumulates over several days, intense rainfall over short period of time, or river overflow because of ice or debris jam or levee failure.
- Flash flood – caused from heavy rainfall in a short period time, <6 hours, characterized by powerful torrents of water from rivers, across roads, or mountain canyons. Dam or levee failure can lead to flash floods.
- River floods – water level rises over top of river banks - from heavy rain fall, snow-melt, ice jams.
- Other, *describe*

Describe water current at estimated time of injury:

- Strong Moderate Weak Unknown N/A

Water temperature: °F or °C

Was the decedent engaging in any of the following activities? *Check all that apply.*

- Driving (e.g., on wet or flooded roadways)
- Sheltering in place either in home/business
- Swimming/surfing (e.g., in pre or post hurricane ocean waves)
- Fishing/playing/wading/walking (e.g., near high water on boardwalks, beaches, or flooded rivers)
- Attempting to rescue another from water
- Other, *describe:*

Was the decedent that drowned driving/riding in a motor vehicle?

- Yes No Unknown

Was the decedent that drowned driving/riding in a water craft?

- Yes No Unknown

If yes to either of the above,

Did the vehicle get washed away by flood water?

- Yes No Unknown

Did the vehicle enter an area beyond a "warning barrier"?

- Yes No Unknown

5 MOTOR VEHICLE CRASH QUESTIONS

Describe the motor vehicle crash:

Any evidence the decedent exited the vehicle intentionally?

- Yes No Unknown

Did the vehicle run into or get struck by debris (e.g., falling trees)?

- Yes No Unknown

Was the decedent going to or coming from work at time of injury

- Yes No Unknown

Was the decedent performing occupation-related work at the time of injury?

- Yes No Unknown

Was the decedent working on the response or recovery?

- Yes No Unknown

6 INJURY QUESTIONS

How did the injury occur? Check all that apply:

Electric current or burn (Describe)

Submersion under water → Complete Section 4: Drowning Questions

Motor Vehicle Crash → Complete Section 5: Motor Vehicle Crash Questions

Hit by or struck against (Describe)

Crushed (Describe)

Asphyxia (Describe)

Cut/laceration/impaled (Describe)

Burn and/or smoke inhalation (Describe)

Fall, slip, trip, specify

From height (Describe)

Same level (Describe)

Other (Describe)

7 OTHER NON-INJURY CAUSES QUESTIONS

Describe circumstances surrounding this non-injury death. Check all that apply:

Lack of access to durable medical equipment (e.g., home oxygen) (Describe)

Lack of access to life-saving medical care (e.g., dialysis) (Describe)

Exacerbation of chronic disease (Describe)

Vulnerable health status (e.g., 85+ years old, dementia) (Describe)

Other, describe

8 INFORMATION ABOUT THE DECEDENT

Was the decedent incapacitated? Yes No Unknown

If yes, how?

If a lightning strike, Does it appear that the decedent took a position for safety (e.g., crouching in a ball)?

Yes No Unknown N/A

Before death, was the decedent engaged in any of the below activities?

Boating?

Yes No Unknown

If YES, describe:

Fishing?

Yes No Unknown

Swimming/wading?

Yes No Unknown

Lying on the beach?

Yes No Unknown

9 STORM INFORMATION

Document the weather conditions for the tornado in ZIP code for the location of injury:

(Source: local emergency manager or National Weather Service)

Was there an active severe thunderstorm watch, warning, or alert where the incident occurred?

Yes No Unknown

Name of storm, if applicable:

Was here a severe thunderstorm watch, warning, or alert occurring where the incident occurred?

Yes No Unknown

Was the decedent aware of the warning or watch?

Yes No Unknown

By what methods (e.g. phone call from friends, word of mouth)

Were there confirmed reports of a thunderstorm/lightning? Yes No Unknown

As you close this case, did you see evidence that the death was related to:

The direct force of the storm?

An unsafe environment caused by the storm?

Actions taken by the decedent during or after the storm?

If YES to any of the above, describe:

10 DATA SOURCES

What data sources were used to complete this form? (check all that apply)

- Law enforcement records and/or interviews
- EMS run sheets and/or interviews
- Hospital or Emergency Department records and/or interviews
- Past medical records
- Mental health records
- Substance abuse treatment records
- Online media (e.g., newspaper reports, weather details)
- Local Emergency Manager(s) interviews
- Local staff at NWS Weather Forecast Office interviews
- Other interviews, *specify with whom:*

- Other, *specify:*

Form completed by

Name/contact information:

Date:

- Weather conditions
- Name of storm or event, if applicable
- If lightning strike
 - Engagement in activities at time of the strike (e.g., outside swimming, playing on field, or hiking)
 - Whether decedent took a position for safety (e.g., huddled in ball, inside a picnic shelter)
- If motor vehicle accident:
 - Whether road conditions were affected by the storm
 - Evidence the vehicle entered areas beyond a warning barrier
 - Evidence the vehicle ran into or was struck by debris
 - Evidence the vehicle was swept away by mud or water
- Engagement in recreational activities near water (e.g., fishing, boating, swimming)
- Engagement in activities related to storm preparation
- Engagement in activities related to storm clean up
- Whether the location of the scene was under thunderstorm watch or warning
- Whether decedent was aware of the watch or warning

Resource B: GLOSSARY OF DISASTER-SPECIFIC TERMS

Definitions of disaster-specific terms found on the supplemental forms.

Black out: A complete power loss affecting many or all electric users over a large area for an extended period of time.

Earthquake (Magnitudes 1-10): An earthquake's magnitude is the measure of the maximum motion during an event. The scale used to measure an earthquake's magnitude depends on how much time has elapsed since the earthquake occurred. More information on [magnitude](#) is available on the United States Geological Survey website.

Environmental evidence of lightning: There may be some indication that lightning has struck near or around where the decedent was found. Signs of lightning striking include the presence of glassy rocks called fulgurite that are the shape of convoluted tubes, damage to grass or earth in the shape of the path the lightning traveled, removal of tree bark, and dead trees.

Hurricane (Categories 1-5): This is the scale used to assess damage caused by a hurricane. More information about the [Saffir-Simpson Hurricane Wind Scale](#) is available of the NOAA website.

Lichtenberg figure: A reddish, fern-like mark left on the body after it is struck by lightning. These figures could disappear after a few hours or days so they are important to document at the scene as evidence of the decedent being struck by lightning.

Position for safety (Earthquake): Recommended positions for safety are based on where a person is during an earthquake.

- *People who are indoors* should DROP down onto hands and knees, COVER their head and neck under the shelter of a sturdy table or desk, and HOLD ON to that shelter (or to their head and neck) until the shaking stops.
- *People who are outdoors* should move away from buildings, utility wires, sinkholes, and fuel and gas lines and get into an open area. Out in the open, they should get down low and stay there until the shaking stops.
- *People who are in automobiles* should move their car to the shoulder or curb, away from utility poles, overhead wires, and underpasses or overpasses. They should stay in the car with the parking brake set and the radio turned on to listen for emergency broadcast information.

Evaporative (swamp) cooler: This device, typically found in arid areas, uses water evaporation to cool the air. They are economical air conditioners for desert climates.

Tornado (EF 0 – EF 5): This is the scale used to assess damage caused by a tornado. More information about the [Enhanced Fujita Tornado Damage Scale \(EF scale\)](#) is available on the NOAA website.

Warnings: Criteria for a warning varies by type of storm or extreme weather. Definitions can be found on the [National Weather Service website](#) for natural disasters or extreme weather events covered by the supplemental forms. Investigators can determine whether the location where the decedent was found was under a warning through the [NOAA website](#) or a local emergency manager.

Watches: Criteria for watches varies by type of storm and weather severity. Definitions can be found on the [National Weather Service website](#) for those natural disasters or extreme weather events that are covered by the supplemental forms. Investigators can determine whether the location where the decedent was found was under a watch through the [NOAA website](#) or a local emergency manager.

Resource C: DATA SOURCES

Suggested data sources for disaster or weather-specific information

| Available information | Source | | | |
|--|--|-----------------------|------------------------------|-------------------------|
| | NOAA–NWS Weather Forecasting Office | Emergency managers | U.S. Geological Survey | Informant interviews |
| Weather-related information | X | X | | |
| Warnings or watches issuance | X | X | | |
| Sirens/other community warnings | | X | | X |
| Rating/Strength of storm or event | X | X | X | |
| Declared state of emergency or federal declaration | | X | | |
| Mandatory evacuation order | X | X | | |

NOAA–NWS = National Oceanic and Atmospheric Administration–National Weather Service.

National Weather Service Forecast Offices

The National Weather Service (NWS) has forecast offices across the country, organized into six regions. Links to the forecast offices and their local Warning Coordination Meteorologist can be found at <http://www.nws.noaa.gov/organization.php?task=wfo.php> and <http://www.weather.gov/stormready/contact>

State Emergency Management Associations

Most states have an emergency management association whose members includes local emergency management professionals. They can be a resource for coordinating with emergency management during a disaster. Additionally, the Federal Emergency Management Agency (FEMA) maintains a list of state government emergency management agencies, found at <https://www.fema.gov/emergency-management-agencies>.