



## **Severe Winter Weather**

Dozens of Americans die each year due to severe winter weather events. Extremely cold temperatures, snow and ice can cause injuries, property damage and fatalities in a number of direct and indirect ways. Most deaths are indirectly related to the severe weather, which is why winter storms are considered deceptive killers. Causes of death include hypothermia, heart attacks caused by overexertion, traffic accidents due to poor driving conditions including icy roads, and fires due to the dangerous use of heaters. People can become trapped in their cars or at home without access to assistance, and without power and heat.

Winter storms are often accompanied by high winds, freezing rain or sleet, heavy snowfalls, extremely cold temperatures and winter flooding.

### **High Winds**

The high winds that sometimes accompany a severe winter storm can create blizzard conditions with blinding wind-driven snow, severe drifting, and dangerously low wind chill temperatures. These strong winds can knock down power lines, utility poles and trees. Storms with high winds along the coast can lead to coastal flooding and beach erosion leaving hazardous conditions and hidden problems.

### **Wind Chill**

Wind chill can be determined when wind velocity and cold temperatures are combined. Wind chill can be extremely dangerous to people outside as it can cause a rapid loss in body heat resulting in hypothermia. Plants and objects, such as cars, are not affected by wind chill.

### **Freezing Rain/Ice**

Heavy accumulations of ice can bring down power lines, trees, telephone wires and communication towers. Communications and power can be disrupted for days. Ice, even in small amounts, can be extremely dangerous to motorists as well as pedestrians. Accumulation on bridges and overpasses occurs more

rapidly than on the road, and these areas become particularly hazardous. About 70% of ice and snow related injuries and fatalities occur in motor vehicles, mostly due to accidents caused by icy roads.

## **Heavy Snowfalls**

An entire region can be immobilized by a heavy snowfall. Commuters become stranded, airports shut down, emergency services are disrupted, and the flow of supplies is interrupted. The weight of a heavy snow accumulation can cause roofs and even entire buildings to collapse, knock down limbs and trees and bring down power lines. Homes and farms may be cut-off and isolated for days. Livestock that is not protected may be lost. Avalanches are always a threat in mountainous areas after heavy snowfalls. An avalanche can reach as much as one million tons and can travel at speeds up to 200 mph. Rapid accumulation of snow triggers more than 80% of midwinter avalanches. About 25% of winter storm related injuries and deaths are people who get caught out in the storm, most of which happen to males over 40 years old.

## **Extreme cold**

Winter storms are often accompanied by extreme cold. Frigid temperatures are also often left in the storm's wake. Exposure to extreme cold causes frostbite and hypothermia and is life-threatening. At the highest risk are the elderly and very young. 50% of deaths related to exposure to cold occur in the 60 years and older age group. Over 75% of cold exposure fatalities are in males, and 20% occur in the home.

Freezing temperatures can result in pipes freezing and bursting resulting in property damage. Crops may also be damaged. If the temperature stays below freezing for long periods rivers can freeze, disrupting shipping and possibly causing ice jams which can cause flooding.

## **Flooding**

Coastal and tidal flooding can be generated by winter storms, resulting in severe property damage and even the loss of lives. If the water level rises or a thaw begins large sections of ice in frozen rivers and lakes become jammed at man-made and natural obstructions creating temporary dams, causing severe flooding. A sudden thaw of heavy snow and ice may also result in flooding.

## **Other Dangers**

Power outages increase the risk of fire as people use alternative fuel sources for heating their homes, such as wood and kerosene and use fuel burning lanterns and candles for light. Carbon monoxide poisoning may also result from the burning of alternative fuels in improperly ventilated rooms.

A major winter storm can last for several days. Everyone is potentially at risk. A few degrees could be the difference between rain, ice or snow, wind speed the difference between a minor snowstorm and a dangerous blizzard. These events and their overall impact cannot be prevented. Being prepared is our best strategy in reducing the loss of life, injuries and damage to property and livestock

**By Sigrid Lynch, APCO Institute Training Courses Coordinator**

### **References**

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## Quiz

### **CDE Article – Severe Winter Weather**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

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1. Wind chill only affects plants.
  - A. True
  - B. False
  
2. Burning alternative fuel for heat in an improperly ventilated room can cause carbon monoxide poisoning.
  - A. True
  - B. False
  
3. The majority of winter storm related deaths occur due to motor vehicle accidents.
  - A. True
  - B. False
  
4. Ice jams in thawing lakes and rivers can cause serious flooding.
  - A. True
  - B. False
  
5. Ice accumulations do not pose any hazard to motorists or pedestrians.
  - A. True
  - B. False