



Kansas Cold Weather Toolkit

Planning for Cold Weather Safety in Kansas

For Public Health Professionals & Emergency Preparedness

Version 1.0

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Acknowledgments

This cold weather toolkit has been created by the Kansas Extreme Weather Workgroup in order to increase awareness and readiness among the population in the event of extreme cold weather. This collaborative multiagency workgroup is dedicated to protecting public health and safety. This toolkit was adapted with permission from the Wisconsin Department of Health Services winter weather toolkit.

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Kansas Cold Weather Toolkit

Overview of the Toolkit

The purpose of the toolkit is to help decision makers in the public and private sectors, as well as citizens, increase their level of preparedness during the cold season. The toolkit focuses on Kansas examples and processes that describe practical, implementable steps and strategies to prevent morbidity and mortality from extreme cold weather at the local level. It is organized into multiple interdependent guides to be used in conjunction with each other. There is coordinated message mapping located at the back of the document.

Introduction to Cold Weather Events

According to the National Weather Service (NWS), cold temperatures and wind chills cause an average of at least 32 deaths per year and winter storms cause an average of 40 deaths per year in the United States.

Winter weather creates dangerous conditions including icy, snow- and sleet-covered roads; in Kansas, these conditions are responsible for thousands of vehicle accidents and at least 15 deaths each winter.

Although Kansans are familiar with bad winter weather, extreme cold, snow, ice, rain, and sleet heighten the risks of injury and death when unprepared; particularly susceptible populations. That includes the elderly, the very young, socially isolated persons, those living with comorbidities, persons with special healthcare needs, and those with low socioeconomic status.

Guide One: Winter Weather Alerts

Wind Chill Watch: Conditions are favorable for wind chill temperatures to meet or exceed local wind chill warning criteria in the next 24 to 72 hours. Wind chill temperatures may reach or become colder than -25 degrees Fahrenheit.

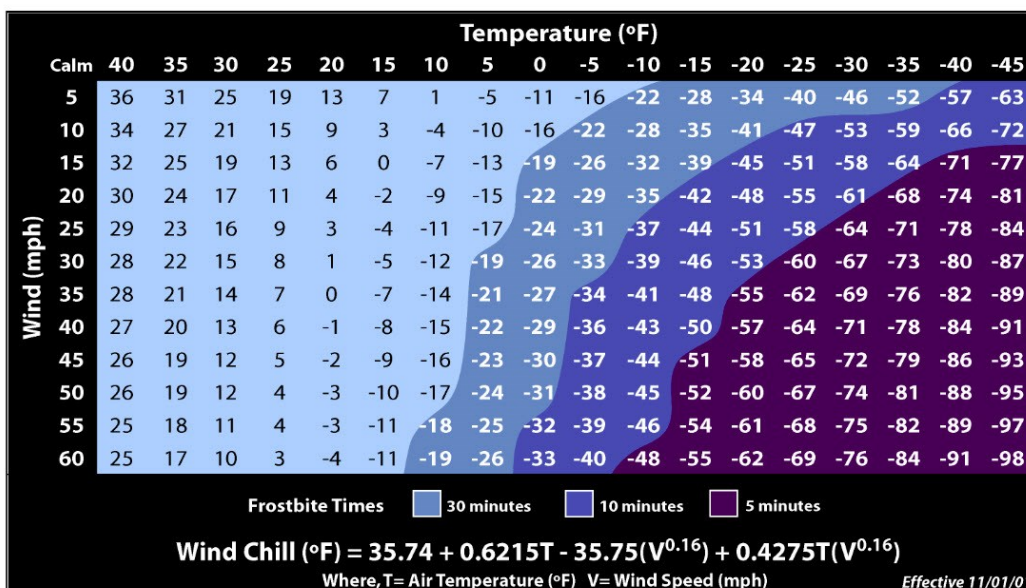
Wind Chill Advisory: Wind chill is expected to exceed local wind chill advisory criteria in the next 12 to 36 hours. Wind chill temperatures may reach or become colder than -15 degrees Fahrenheit.

Wind Chill Warning: Wind chill temperatures are expected to meet or exceed local wind chill warning criteria in the next 12 to 24 hours. Wind chill temperature may reach or drop below colder than -25 degrees Fahrenheit.

Winter Weather Advisory: A winter storm event (sleet, snow, freezing rain, snow and blowing snow or a combination of events) is expected to meet or exceed local winter weather advisory criteria in the next 12 to 36 hours but stay below warning criteria. Criteria for snow is 1 to 5 inches of snow in 12 hours or less covering at least 50% of the zone or encompassing most of the population. Criteria for ice are any ice accumulations less than ¼ inch over at least 50% of the zone or encompassing most of the population.



Wind Chill Chart



Guide One: Winter Weather Alerts

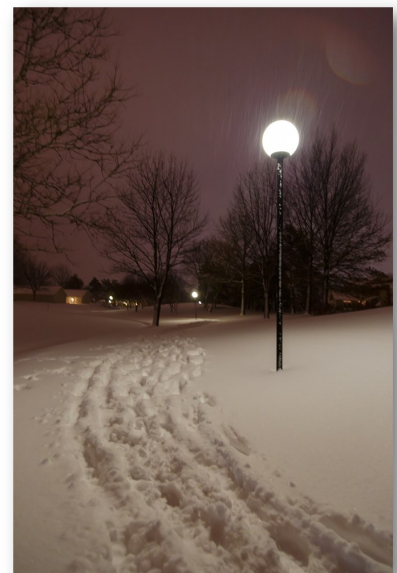
Blizzard Watch: Conditions are favorable for a blizzard event in the next 24 to 72 hours. Sustained wind or frequent gusts greater than or equal to 35 mph will accompany falling and/or blowing snow to frequently reduce visibility to less than $\frac{1}{4}$ mile for 3 or more hours.

Blizzard Warning: Blizzard event is imminent or expected in the next 12 to 36 hours. Sustained wind or frequent gusts greater than or equal to 35 mph will accompany falling and/or blowing snow to frequently reduce visibility to $\frac{1}{4}$ mile for 3 or more hours.

Winter Storm Watch: Conditions are favorable for a winter storm event (heavy sleet, heavy snow and blowing snow or a combination of events) to meet or exceed local winter storm warning criteria in the next 24 to 72 hours. Criteria for snow is at least 6 inches or more in 12 hours or less; or at least 8 inches or more in 24 hours covering at least 50% of the zone or encompassing most of the population. Criteria for ice is $\frac{1}{4}$ inch or more over at least 50% of the area or encompassing most of the population.

Winter Storm Warning: A winter storm event (heavy sleet, heavy snow, ice storm, heavy snow and blowing snow, or a combination of events) is expected to meet or exceed local winter storm warning criteria in the next 12 to 36 hours. Criteria for snow is 6 inches or more in 12 hours or less; or 8 inches or more in 24 hours covering at least 50% of the zone or encompassing most of the population. Criteria for ice is $\frac{1}{4}$ inch or more over at least 50% of the zone or encompassing most of the population.

Ice Storm Warning: An ice storm event is expected to meet or exceed local ice storm warning criteria in the next 12 to 36 hours. Criteria for ice is $\frac{1}{4}$ inch or more over at least 50% of the zone or encompassing most of the population.





Guide One: Winter Weather Alerts

General Terms for All Types of Weather

Winter Weather Event: A winter weather occurrence that affects public safety, transportation and/or commerce.

Outlook: An outlook is used to indicate that a hazardous winter weather event may develop in the next 3-7 days. It is intended to provide information to those who need considerable lead time to prepare for the event.

Watch: A watch is used when the risk of a hazardous winter weather event has increased, but its occurrence, location and/or timing is still uncertain. It is intended to provide enough lead time so those who need to set their plans in motion can do so. Watches are generally issued 36-72 hours before onset of a weather event.

Warning: Warnings are issued when a hazardous winter weather event is occurring, is imminent or has a very high probability of occurrence. A warning is used for conditions posing a threat to life or property.

Advisory: An advisory is appropriate for less serious conditions compared to a warning that can cause significant inconveniences and, if caution is not exercised, could lead to situations that may threaten life and property.

Wind Chill: Wind chill is the temperature the body feels, calculated using the actual temperature outdoors and the wind speed. It is always lower than the actual temperature (see table on first page of guide).

Sleet: Sleet is defined as rain that turns to ice pellets before reaching the ground. Sleet can cause dangerous and slick outdoor conditions.

Freezing Rain: Defined as rain that freezes on contact when it hits the ground. It can cause extremely dangerous and slick outdoor conditions and have destructive impacts on trees, power lines and other utility infrastructure.

Cold-Related Fatality: Cold related fatality includes deaths that are attributed to cold weather events.

Guide Two: Cold-Related Health Effects

Health effects such as hypothermia, frostbite, overexertion, dehydration, carbon monoxide, falls and car crash-related injuries are all illnesses and injuries that are associated with cold weather.

Hypothermia

Hypothermia occurs when the body's temperature becomes abnormally low. It often occurs after prolonged exposure to cold temperature.

Early Symptoms:

- Shivering
- Fatigue
- Loss of coordination
- Confusion and disorientation

Late Symptoms:

- No shivering
- Blue skin
- Dilated pupils
- Slowed pulse and breathing

First Aid Instructions

- Request immediate medical assistance.
- Move victim into a warm room or shelter.
- Remove wet clothing.
- Warm the center of their body first then the chest, neck, head and groin, using an electric blanket; or use skin-to-skin contact under loose, dry layers of blankets, clothing or towels.
- If the person is conscious, then warm beverages may help increase the body temperature. Do not give alcohol to someone suffering from hypothermia.
- Once body temperature has increased keep them dry and wrapped in a warm blanket, including the head and neck.
- When there is no pulse detected, begin CPR immediately and call 911.

Guide Two: Cold-Related Health Effects

Frostbite

Frostbite is an injury to the body that is caused by freezing, which most often affects the nose, ears, cheeks, chin, fingers and toes.

Symptoms:

- Reduced blood flow to the hands and feet
- Numbness
- Aching
- Tingling or stinging sensation
- Bluish or pale waxy skin

First Aid

- Get into a warm room as soon as possible.
- Unless necessary, do not walk on frostbitten feet or toes.
- Immerse the affected area in warm, (not hot) water or warm the affected area using body heat. Do not use a heating pad, fireplace or radiator for warming.
- Do not massage the frostbitten area because doing so may cause more damage.

To download an infographic that you can use from the Centers for Disease Control and Prevention, go to https://www.cdc.gov/phpr/documents/hypothermia-frostbite_508.pdf.



Guide Three: Cold Weather Health Risks

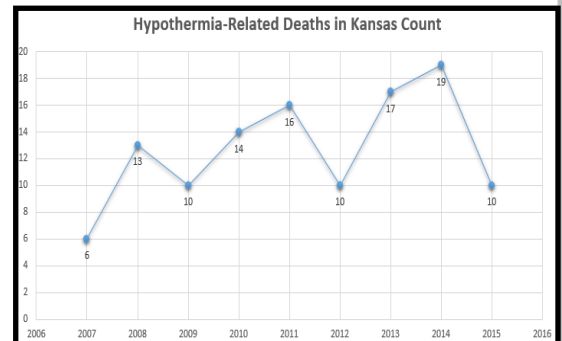
During cold weather and especially during periods of extreme cold, the risk of associated health effects are increased. Knowing in advance what to watch for can help to prevent some of these risks.

Heart Health Risk

Your risk of heart attack can increase when you are in the cold because it can constrict or narrow your blood vessels. Performing strenuous outdoor activity combined with this effect may stress your heart. To reduce the risk you should dress warmly, regulate your activity and pay attention to how you feel.

Body Temperature Risk

Cold temperatures put your at risk for hypothermia, especially if you are an older adult. It does not always have to be extreme cold that can cause it, even prolonged exposure to milder cold can result in hypothermia risk. If at all possible take time to acclimate to the cold and decrease the work load. Dressing in warm layers, covering extremities and staying aware of your body signals can help you handle the cold and prevent hypothermia.



Immune System Risk

Respiratory illness risk tends to increase in winter months when people are concentrated indoors and exposed to dryer air circulating viral infections. Take precautions to reduce risk.

- Stay Hydrated
- Get a flu shot
- Practice good hygiene and stay away from people who are sick
- Wash your hands frequently using soap and water for 20 seconds
- Always cover your nose and mouth when you cough or sneeze with a tissue or your arm
- Avoid touching your nose, mouth and eyes as much as possible



Guide Four: Cold Weather Preparation

Emergency Supply Kit

There is a possibility that you can lose heat, power, telephone service, and suffer from a shortage of supplies if a winter storm continues for than a day. Therefore, it is important to assemble an emergency supply kit and be prepared in advance.

Items to add to your emergency supply kit are:

- Blankets
- Matches
- First aid kit with instructions
- Multipurpose dry chemical fire extinguisher
- Flashlight or battery-powered lantern
- Battery powered radio
- Battery powered clock or watch
- Non-electric can opener
- Extra batteries
- Snow shovel
- Rock salt
- Special needs items (diapers, medications, medical equipment, etc.)
- Paper towels and/or tissues for sanitary purposes

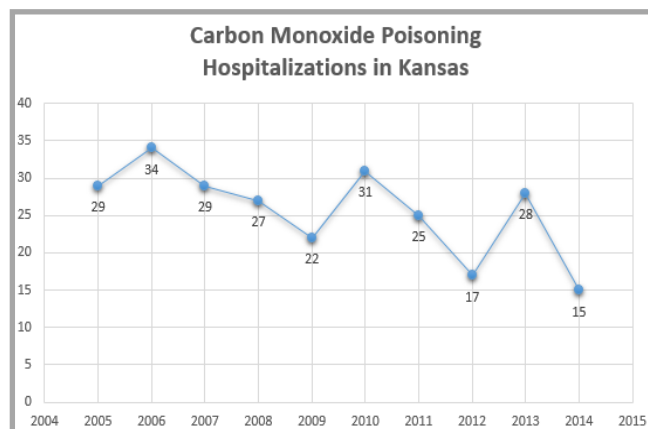
Guide Four: Cold Weather Preparation

Stockpile Food and Water

- It is a good idea to stock three days worth of non-perishable food items that don't need to be cooked or refrigerated.
- Have on hand at least one gallon of water per person for three days. Store water in clean containers or purchase bottled water that can be used for drinking and other household needs.
- Remember that the more isolated your home is the more stockpiling of food, water and medications you should do.

Winterize Your Home

- Install a smoke detector and a battery-operated carbon monoxide detector before winter begins and test them to make sure they work.
- Insulate exterior water lines, attics and walls.
- Install storm windows and insulated doors.
- Install a thermometer in a readily visible location to be able to check indoor temperature.
- Have your chimney, furnace and other heating utilities inspected by a professional before the winter season begins.
- Don't forget about pets and providing them with adequate warm shelter if they aren't indoors. They need access to unfrozen water at all times as well.





Guide Five: Winter Storm Travel

Prepare Your Car for Travel

Just like preparing your home for cold weather, it is important to put together emergency supplies in your vehicle. Placing as much as you can in one or two plastic totes with a lid will help keep it contained and readily available. Be sure to remove any snow on your vehicle's windows, lights, brake lights and signals. You have to be able to see and be seen!

The following are good items to have for winter traveling:

- First Aid Kit and emergency numbers in an accessible location
- A can and waterproof matches (to melt snow for water)
- Ice scraper and brightly colored cloth to use as an emergency alert
- Road maps if traveling in an unfamiliar area and extra gas
- Cell phone and charger
- Tools or toolkit and tow rope
- Canned compressed air with sealant for emergency tire repair
- Bag of sand or cat litter to pour on snow for traction or traction mats
- Battery-operated radio and flashlight with extra batteries
- Jumper cables and a collapsible shovel
- Emergency flare and whistle
- Extra winter clothes or blankets
- Container of water and high calorie preserved food

Winterize Your Car

- Have your vehicle regularly serviced and replace worn tires to help with traction.
- Maintain high antifreeze levels and use wintertime windshield wiper fluid.
- Try to keep your gas tank full in order to prevent ice formation.

Guide Five: Winter Storm Travel

Driving in a Winter Storm

- Travel only if necessary and check for traffic updates and highway closures by calling 511 for information related to winter weather or check out KanDrive.
- Notify a friend or family member of your destination and expected time of arrival and return. Ask them to notify authorities if you don't arrive when you are supposed to.
- Keep an emergency kit in your car at all times.
- Avoid driving at night and don't drive alone if you have the option.
- Try to stay on main highways and avoid untraveled country roads whenever possible.
- Avoid driving in low , visibility conditions and on icy snow covered roads, bridges and overpasses.
- If conditions become too hazardous, pull off the road and turn your hazard lights on. Notify emergency services of your location.
- Always dress as if you were going to get stranded and keep extra layers in the vehicle.



What to do when Stranded

- Stay inside your vehicle, turn your hazard lights on, tie a brightly colored cloth to your antennae, move supplies close to you and notify emergency services of your location.
- Remove snow from around your tail pipe to prevent carbon monoxide buildup in the vehicle and wear your seatbelt when sitting inside.
- Run your heat for 10 minutes every hour and crack your window for ventilation.
- Wrap yourself in extra clothes and blankets and huddle with others to keep warmer.
- Stay awake and move your arms and legs routinely to keep blood flowing.



Guide Six: Outdoor Safety

What to Wear

Wearing multiple warm layers of clothing and staying dry is essential to safety during cold weather. If you must be outside, dress properly, stay dry as much as possible and if you get wet or sweat change into dry clothes when you return indoors.

- Pay attention to wind chill and wear several layers of loose fitting clothing with an outer layer and footwear that is wind and water resistant. Cover all exposed parts of the body as much as possible.
- The risk of frostbite is increased in people with reduced blood circulation and those not dressed appropriately for the winter weather conditions. Frostbite is caused by the freezing of the skin and tissues. Reddened skin develops gray/white patches in extremities causing tingling, aches, loss of feeling and blisters in the affected area.

Limit Time Outdoors

- Limit the amount of time outdoors and listen to your body. Go indoors to take a break and warm up.
- Work outdoors during the warmest part of the day.
- Acclimate to cold and decrease work load.
- Carry a cellular phone with you to call for help if needed. Be sure to let others know where you are and what you will be doing.



Guide Six: Outdoor Safety


Avoid Ice

Walking on ice is extremely dangerous. Many cold weather injuries result from falls on ice covered sidewalks, steps, driveways and porches. Keep your steps and walkways as free of ice as possible by using rock salt or another chemical de-icing compound. Sand may also be used on walkways to reduce the risk of slipping.

Avoid Overexertion

Do not overexert yourself outdoors in extreme cold or during winter storms. Sweating cools the body and wet clothing loses its insulating value, therefore staying dry is important.

- Avoid overexertion when shoveling snow or doing other outdoor chores. Take breaks in warm dry areas and when possible push snow instead of lifting it. Do not shovel snow if you have heart disease or high blood pressure, as the cold puts more stress on your cardiovascular system.
- Shivering is one of the first signs of hypothermia and signals that you need get warmed up. Signs of hypothermia are uncontrollable shivering, confusion, loss of coordination, slurred speech, drowsiness, exhaustion and dangerously low body temperature.



Guide Seven: Indoor Safety


Lack of Indoor Heat

During the winter power outages can occur due to weather events or extreme cold can lead to insufficient heat indoors depending on heat sources. If you are exposed to cold temperatures due to lack of indoor heat, try to seek alternative shelter through family, friends, neighbors or by contacting your local extreme weather shelter.

- Conserve body heat by not overexerting yourself.
- Eat a well-balanced meal to help you stay warmer. Avoid alcohol because it can cause your body to lose heat more rapidly. Drink warm beverages to help maintain body temperature.
- Dress warmly in multiple layers of clothing and wrap up in blankets.
- Avoid frequent opening of doors and close off unused rooms. Prevent drafts by using towels under doors to conserve interior warmth and close draperies or cover windows with blankets at night.

Prevent Frozen Pipes

- Extremely cold temperatures can damage and freeze pipes. Vulnerable pipes include those found on exterior walls, in unheated rooms and outside supply lines.
- Winterize your home by sealing out drafts, insulating water lines and covering exterior water spigots or hydrants before cold weather begins.
- Keep an emergency water supply that will last for several days in case pipes do freeze.
- Keep the temperature in your home constant during the day and night. If you leave the house unattended, keep your heat at a minimum of 55 degrees Fahrenheit.
- Open cabinet doors for warm air to circulate around plumbing pipes. Remember to keep any household chemicals out of reach of children.
- Leave water taps slightly open so they can continuously drip. If pipes are frozen, completely open all faucets. Shut off the main water valve immediately if a pipe bursts.



Guide Seven: Indoor Safety

Safely Use Alternative Sources of Heat

Alternative sources of heating produce major risks including fires and carbon monoxide poisoning. Have a plan and prepare in advance to use some other back-up source of heat during power failure or other event. There are numerous safety considerations to keep in mind when using alternative sources of heat such as all types of space heaters, fireplaces and wood or pellet stoves.

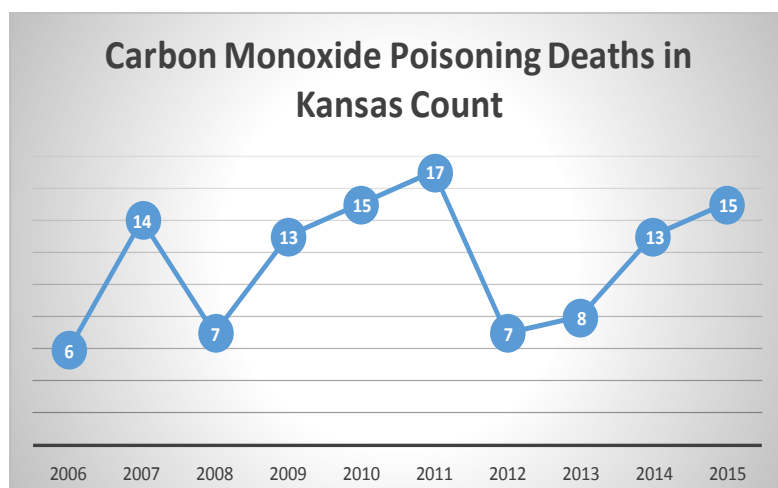
- Never use electric generators, grills, or other gasoline, propane, natural gas or charcoal burning devices indoors, as this may cause carbon monoxide poisoning.
- Ensure adequate ventilation for a heat source by keeping flues clean, cracking windows and keeping doors open.
- Do not plug space heaters into extension cords.
- Do not put a space heater on anything that could catch fire. Place it on a noncombustible surface.
- Only use the designated fuel for your heat source.
- Follow all building codes and manufacturer's instructions.
- Monitor the heater or heat source yourself to make sure it works safely.
- Keep young children away from working heaters and stoves to avoid injuries.

Guide Seven: Indoor Safety

Avoid Carbon Monoxide Poisoning When Using Alternative Heat

Use of alternative heating sources during power outages increases the risks of carbon monoxide poisonings. Don't take chances and be sure to follow all precautions.

- Carbon monoxide poisoning occurs when the body is in contact with carbon monoxide, an odorless, colorless gas that is given off by fuel burning equipment.
- Install battery operated carbon monoxide detectors and smoke detectors on every level and near sleeping areas.
- Warning signs of carbon monoxide poisoning include shortness of breath, headache, confusion, nausea, dizziness, and loss of consciousness. These early warning signs should be taken very seriously because carbon monoxide poisoning is life threatening.
- If you suspect a carbon monoxide leak in your house or if your carbon monoxide alarm goes off, leave the house immediately and call 911.



Carbon monoxide poisonings happen every year in Kansas.

It is Preventable!



Guide Eight: Power Outages

Keep Food Safe

Keep the refrigerator and freezer doors closed as much as possible to keep food cold.

- Eat perishable foods from the refrigerator first.
- Eat freezer food after the refrigerator food is eaten.
- Eat non-perishable foods (such as those stored in cans or jars) after food from the refrigerator and freezer is eaten.
- If it seems the power outage will last more than 4 hours, prepare a cooler with ice and transfer your refrigerator items to the cooler.
- If it seems the power outage will last more than a day, prepare a cooler with ice and transfer your freezer items to the cooler.
- If possible, use food or appliance thermometers to monitor food temperatures. Refrigerated food should be 40°F or below and frozen foods should be 0°F or lower.
- To evaluate when to discard food items, use the charts at https://www.foodsafety.gov/keep/charts/refridg_food.html and https://www.foodsafety.gov/keep/charts/frozen_food.html.
- Keep food in a dry, cool spot away from sunlight and keep it covered at all times.



Guide Eight: Power Outages

Monitor Electrical Equipment

- Turn off and unplug all unnecessary electrical equipment. When the power comes back on surges or spikes can damage equipment.
- Leave one light on so you'll know when the power comes back on.
- Eliminate unnecessary travel, especially by car. Power outages may be occurring throughout the area resulting in congested roads and traffic light outages.

Use Generators Safely

- If you are considering buying a generator, get advice from a professional such as an electrician before the purchase. Make sure the generator you purchase is rated for the power you need.
- Keep the generator outside, at least 20 feet from windows, people or homes.
- When using a portable generator, connect the equipment you want to power directly to the outlets on the generator. Do not connect a portable generator to a home's electrical system.
- Never use a generator, grill, camp stove or other gas or fuel-powered device inside a home, garage, basement, crawlspace, or partially-enclosed area.

A photograph of a swing set in a park during winter. The ground is covered in snow, and the trees and bushes are heavily frosted with white snow. The swing set is a dark metal frame with two swings hanging from it. The overall scene is quiet and cold.

Guide Nine: Vulnerable Populations

Elderly

Elderly adults may live alone, suffer from chronic disease or have a disability that makes them more vulnerable to extreme weather conditions. The elderly have slower metabolism and often don't create as much body heat as other adults. They may not sense air temperature as well, therefore temperature drops could go unnoticed. These are some reasons to check on elderly neighbors and family often to ensure their heating source is working and they maintain a healthy body temperature. The elderly are especially vulnerable if they are socially isolated or live in an isolated setting and contact is limited. If the heat supply stops, this population will be at extreme risk for indoor and outdoor winter weather hazards.

Low Socioeconomic Status

Cold weather often disproportionately affects people with low socioeconomic status, especially the homeless. The colder the temperature the more heating costs rise placing an additional burden on those with low income. The absence of central heating in the home or a poorly heated home can often lead to the use of unsafe heating sources; placing the occupants at greater risk of injury and death due to fire and carbon monoxide poisoning. Kansans facing heating problems in their homes should contact the local utility companies for assistance with their heating bills. Additionally, cold weather shelters may be available in the area. They should contact local non profit organizations such as the Red Cross, libraries, or churches to inquire about shelters.

A black metal swing set stands in a snowy, wooded area. The trees are covered in snow, and the ground is a smooth, white surface. The swing set has two seats hanging from a central bar.

Guide Nine: Vulnerable Populations

Young Children

Infants cannot produce enough body heat by shivering and lose heat easier than adults. Make sure that infants sleep in a heated room and dress them in warm clothing.

- In an emergency, hold your baby close, as your body heat can keep the baby warm.
- If you are without heat for a long time, go to a shelter or someone's home that has heat.
- Do not put your infant in bed with you, as rolling onto infants is a risk.

Special Populations

Families that include a member with special health care needs/disabilities may require additional assistance during extreme weather events. Identifying potential emergency situations and planning ahead is essential for this population.

- Assemble a 5 day supply kit of food, water, specialty formulas, medical supplies and personal supplies.
- Stock a 5 day supply of medications. For medication requiring refrigeration, have a plan for how you will keep that medication cold during a power outage.
- Charge durable medical equipment prior to the cold weather event.
- If life sustaining medical equipment is used, families should make sure the utility company has been notified to get priority status when restoring power.
- Develop a personal contact list, emergency preparedness plan and an evacuation plan.
- Don't forget to include pets and service animals in those plans.





Guide Ten: Weather Communications

General Guidelines

Be Concise

- Keep key messages brief and consistent throughout different media outlets.
- Stick to three key messages or one key message with three parts for each underlying concern or specific question.
- Messages should be solution-oriented, promote action and constructive.

Be Credible

- Develop key messages that cite credible third parties. Coordinate and collaborate with other credible sources.
- Being trustworthy and timely is very important to the reception of your message.
- Avoid unnecessary use of “absolute” words such as no, not, never, nothing and none. Keep a positive tone. Try to balance negative messages with positive ones.

Be Clear

- Develop messages that are easily understood by the target audience.
- The most important messages should be the first and last thing that people read or hear.
- Use graphics and other visual aids to enhance key messages.

Message Mapping

These tables are message maps designed for preparedness professionals to provide key points to the general public in response to questions about preparing for extreme cold and winter storms.

What should I have in my Family Emergency Kit?		
Key message 1	Key message 2	Key message 3
You want to include food, water and medicine for all members of your family.	You want to include supplies for eating and drinking.	You want to include a first aid kit and other supplies to manage minor emergencies.
Supporting information 1-1	Supporting information 1-2	Supporting information 1-3
Healthy non-perishable snacks are good items to put in a family emergency kit.	Manual can openers, cups and disposable tableware are good items to include in kits for eating purposes.	First aid kit and guide to care for injuries; tools for turning off gas or electricity.
Supporting information 2-1	Supporting information 2-2	Supporting information 2-3
One gallon of water per person per day is recommended.	A trash bag to collect waste tableware, wrappers and cans helps to keep things organized and clean.	Toys or games for children and pets can help keep them occupied.
Supporting information 3-1	Supporting information 3-2	Supporting information 3-3
Try to have a couple of days of medication on hand should you have to shelter or evacuate.	Handi-wipes, hand sanitizer and paper towels help with hygiene in the absence of water for washing purposes.	Flashlights, extra batteries, lanterns and glow sticks to see and find each other.

Message Mapping

What should I do to prepare my vehicle?		
Key message 1	Key message 2	Key message 3
Keep your vehicle maintained and fueled.	Plan your travel.	Have supplies in case you get stranded.
Supporting information 1-1	Supporting information 1-2	Supporting information 1-3
Keep a minimum of 1/4 tank of fuel in your vehicle.	Give others your route and estimated departure and arrival times; let them know when you have left and arrived.	Keep extra clothes, gloves, coveralls and/or a blanket in your vehicle to stay warm.
Supporting information 2-1	Supporting information 2-2	Supporting information 2-3
Have a spare, empty, approved fuel container in your vehicle in case you run out.	Be aware of road conditions at www.kandrive.org and follow travel restrictions.	Have a signaling device: KHP “Need Help” sign, emergency triangles, etc. to get attention should you
Supporting information 3-1	Supporting information 3-2	Supporting information 3-3
Be sure to maintain the engine by changing fluids as recommended and keeping tires inflated to correct pressure.	Have emergency numbers handy, like *47 (*HP), to contact the Kansas Highway Patrol should you become stranded.	Keep some snack bars, a bottle of water and a spare cell phone charger in your glove compartment.

Message Mapping

What cold weather injuries should I look out for?		
Key message 1	Key message 2	Key message 3
Exposure to the cold can cause injuries to the skin and cause dehydration.	Poisonings and fires can occur from heating devices.	Slips, falls and overexertion can also lead to injuries and death.
Supporting information 1-1	Supporting information 1-2	Supporting information 1-3
Frostbite and hypothermia can cause pain, loss of feeling and even death if severe.	Furnaces and wood heaters can produce carbon monoxide, which could cause carbon monoxide poisoning.	Many cold weather injuries occur from falls on ice and overexertion.
Supporting information 2-1	Supporting information 2-2	Supporting information 2-3
Frostbite and hypothermia may start as numbness or tingling that progresses to vigorous shivering, confusion and sleepiness.	Warning signs of carbon monoxide poisoning includes shortness of breath, headache, confusion, nausea, dizziness and loss of consciousness.	Sweating cools the body and wet clothing loses its insulating value. The cold puts more stress on the cardiovascular system.
Supporting information 3-1	Supporting information 3-2	Supporting information 3-3
Prevent cold injuries by keeping clothes dry, taking frequent warm breaks and dressing in layers.	Install carbon monoxide detectors and fire alarms. If an alarm goes off, leave immediately and call 911.	Stay off the ice, pay attention to wind chill, acclimate to the cold and decrease the work load.

References and Resources

<https://www.foodsafety.gov/keep/emergency/>

<https://www.cdc.gov/disasters/foodwater/facts.html>

<https://www.cdc.gov/disasters/foodwater/prepare.html>

<http://www.nws.noaa.gov/om/hazstats.shtml>

<https://www.ready.gov/winter-weather>

<http://icyroadsafety.com/fatalitystats.shtml>

<https://www.dhs.wisconsin.gov/publications/p0/p00652.pdf>

<https://www.cdc.gov/disasters/winter/>

<https://www.cdc.gov/features/winterweather/>

<https://www.cdc.gov/niosh/topics/coldstress/>

<http://www.uwheartmo.org/news/cold-weather-safety-tips-united-way-2-1-1-0>

<http://www.kdheks.gov/cphp/index.htm>

<http://www.kdheks.gov/idp/index.html>

<http://www.safekidskansas.org/>

<http://www.kdheks.gov/bar/index.html>

<https://keep.kdhe.state.ks.us/Ephtm/>