

Montana Health Alert Network

DPHHS HAN

ADVISORY

Cover Sheet

DATE

February 19, 2021

SUBJECT

2021 Winter Storms—Clinical Guidance for Carbon Monoxide (CO) Poisoning

INSTRUCTIONS

DISTRIBUTE AT YOUR DISCRETION with clinicians, hospitals and EMS to your local HAN contacts. **Remove this cover sheet before redistributing and replace it with your own**



For LOCAL HEALTH DEPARTMENT reference only
DPHHS Subject Matter Resource for more information regarding this HAN, contact:
**DPHHS CDPHP
Injury Prevention Program
1-406-444-4126**
For technical issues related to the HAN message contact the Emergency Preparedness Section at 1-406-444-0919

REMOVE THIS COVER SHEET BEFORE REDISTRIBUTING AND REPLACE IT WITH YOUR OWN

DPHHS Health Alert Hotline:
1-800-701-5769

DPHHS HAN Website:
www.han.mt.gov

Please ensure that DPHHS is included on your HAN distribution list.
hhshan@mt.gov

Categories of Health Alert Messages:

Health Alert: conveys the highest level of importance; warrants immediate action or attention.

Health Advisory: provides important information for a specific incident or situation; may not require immediate action.

Health Update: provides updated information regarding an incident or situation; unlikely to require immediate action.

Information Service: passes along low level priority messages that do not fit other HAN categories and are for informational purposes only.

Please update your HAN contact information on the Montana Public Health Directory

DPHHS HAN

Information Sheet



DATE

February 19, 2021

SUBJECT

2021 Winter Storms—Clinical Guidance for Carbon Monoxide (CO) Poisoning

BACKGROUND

See CDC HAN

INFORMATION

Carbon Monoxide (CO) poisoning associated with winter weather and power outages is common. In Montana, 19 people have died in the last 5 years due to accidental (CO) poisoning from circumstances including faulty furnaces, using grills or generators in enclosed spaces, or fires or other combustion events. From 2016-2019, there were 384 non-fatal Emergency Department (ED) visits related to CO poisoning, and 62 hospital admissions. Most of these events were accidental. Carbon Monoxide is an odorless, colorless gas, and winter is a prime-time for CO poisonings to occur, so it is important for providers to be educated on the causes and symptoms of CO poisoning to treat patients accordingly.

RECOMMENDATIONS

Clinicians and emergency responders should maintain awareness of CO poisoning, particularly during the winter and after power outages.

This is an official
CDC HEALTH ADVISORY

Distributed via the CDC Health Alert Network
February 17, 2021, 2:15 PM ET
CDCHAN-00440

2021 Winter Storms—Clinical Guidance for Carbon Monoxide (CO) Poisoning

Summary

The Centers for Disease Control and Prevention (CDC) is reminding healthcare professionals seeing patients from the areas affected by recent winter storms to maintain a high index of suspicion for carbon monoxide (CO) poisoning. Other people who may be exposed to the same CO source may need to be identified and evaluated.

The signs and symptoms of CO exposure are variable and nonspecific. A tension-type headache is the most common symptom of mild CO poisoning. Other [common symptoms](#) of CO poisoning are dizziness, weakness, drowsiness, upset stomach, vomiting, chest pain, and confusion.

Clinical manifestations of severe CO poisoning include cardiovascular and neurological effects: tachycardia, tachypnea, hypotension, metabolic acidosis, dysrhythmias, myocardial ischemia or infarction, noncardiogenic pulmonary edema, irritability, impaired memory, cognitive and sensory disturbances, ataxia, altered or loss of consciousness, seizures, coma, and death, although any organ system might be involved.

Although CO poisoning can be fatal, children, pregnant women, the unborn, persons with sickle cell disease, older adults, and persons with chronic illness (e.g., heart or lung disease) are particularly high risk.

Background

Severe winter storms have left millions of homes and businesses without power across the United States. Those who lose power may turn to alternate power sources such as gasoline generators and may use propane or charcoal grills for cooking and heating their homes. If used or placed improperly, these sources can lead to CO build up inside buildings, garages, or campers and poison the people and animals inside.

When obtaining a focused history of patient activities and health symptoms, exposure to a CO source may become apparent. Appropriate and prompt diagnostic testing and treatment are crucial to reduce morbidity and prevent mortality from CO poisoning. Identifying and mitigating the CO source is critical in preventing other poisoning cases.

Recommendations for Clinicians

1. Consider CO poisoning in patients affected by winter storms, particularly those in areas currently without power. Assess symptoms and recent patient activities that point to likely CO exposure. Evaluation should also include examination for other conditions, including smoke inhalation, trauma, medical illness, or intoxication.
2. Administer 100% oxygen until the patient is symptom-free or until a diagnosis of CO poisoning has been ruled out.

3. Perform carboxyhemoglobin (COHgb) testing when CO poisoning is suspected. Venous or arterial blood may be used for testing. A fingertip pulse multiple wavelength spectrophotometer, or pulse CO-oximeter, can be used to measure heart rate, oxygen saturation, and COHgb levels in the field, but any suspicion of CO poisoning should be confirmed with a COHgb level by multiple wavelength spectrophotometer (CO-oximeter). A conventional two-wavelength pulse oximeter is not accurate when COHgb is present. For more information, see CDC's [Clinical Guidance for Carbon Monoxide Poisoning After a Disaster](#).
4. An elevated COHgb level of 2% or higher for non-smokers and 9% or higher COHgb level for smokers strongly supports a diagnosis of CO poisoning. The COHgb level must be interpreted in light of the patient's exposure history and length of time away from CO exposure, as levels gradually fall once the patient is removed from the exposure. In addition, CO can be produced endogenously as a by-product of heme metabolism. Patients with sickle cell disease can have an elevated COHgb level as a result of hemolytic anemia or hemolysis. Additional information about interpretation of COHgb levels can be found within the [Clinical Guidance](#), or call your local Poison Control at (800) 222-1222.
5. Hyperbaric oxygen (HBO) therapy should be considered in consultation with a toxicologist, hyperbaric oxygen facility, or Poison Control Center (800) 222-1222. For additional management considerations, consult a medical toxicologist, Poison Control at (800) 222-1222, or a hyperbaric oxygen facility.
6. Be aware that CO exposure may be ongoing for others spending time in or near the same environment as the patient. These individuals should be evaluated and tested as described in this advisory.
7. Healthcare professionals treating people for CO poisoning should notify emergency medical services (EMS), the fire department, or law enforcement to investigate and mitigate the source and advise people when it is safe to return.
8. Advise patients about [safe practices related to generators](#), grills, camp stoves, or other gasoline, propane, natural gas, or charcoal-burning devices. Stress that that these devices should never be used inside an enclosed space, home, basement, garage, or camper — or even outside near an open window or window air conditioner.

For More Information

[Clinical Guidance for Carbon Monoxide \(CO\) Poisoning After a Disaster](#)

The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.

Categories of Health Alert Network messages:

Health Alert Requires immediate action or attention; highest level of importance
Health Advisory May not require immediate action; provides important information for a specific incident or situation
Health Update Unlikely to require immediate action; provides updated information regarding an incident or situation
HAN Info Service Does not require immediate action; provides general public health information

##This message was distributed to state and local health officers, state and local epidemiologists, state and local laboratory directors, public information officers, HAN coordinators, and clinician organizations##