

## Winter Safety and You

In response to all of the events and news articles this past month, I feel compelled to write this column as a review of common situations and some of their responses that can cause a human safety issue and a possible resulting EMS response. As an opener, I am amazed at the number of issues involving carbon monoxide (CO) poisoning recently. CO is not to be confused with CO<sub>2</sub> (Carbon Dioxide). CO<sub>2</sub> is part of what we commonly exhale, and that plants absorb for food. Most people associate CO with a car's tailpipe exhaust. CO is produced from fossil fuels, whenever there is anything less than complete (100%) combustion. The primary fossil fuels include; oil, gasoline, diesel, propane, butane, kerosene, natural gas, wood and charcoal/coal. There is no perfect device or appliance that can burn any of these fuels at 100% (even if it is new or working properly), so there will always be some amount of CO produced. The rate of death from CO poisoning in the US is apx. 500 people a year. In the last month alone, the Puget Sound region has had over 200 serious cases of CO poisoning and an alarming number of deaths. Some of these incidents are hard to believe; 2 boys killed in a garage while attempting to refuel a running generator. A Kirkland man putting a running generator in his living room. A Burien family of four all dead in their house from a generator running in their garage. A man dead from taking a charcoal grill into his bedroom for heat. All of this is entirely preventable. The bulk of the problem is immigrants that either don't speak or read English, or people that just don't understand the sources of CO poisoning and what it can do. The symptoms are initially hard to spot; nausea, fatigue, headaches, lethargic, runny nose, dizziness/light headedness, confusion, increasing breathing difficulty, seizures, Parkinson's disease similarity. These symptoms are similar to those of the flu, food poisoning or other illnesses. CO is colorless, tasteless and odorless. Recognizing it is especially difficult if you go in and out of the area/structure of where the CO is present. Your symptoms may temporarily go away and you will feel better. Pets will have similar reactions and multiple people in the same area can complain of the same symptoms. High risk groups include infants, the elderly, pregnant women, and anyone with a history of cardiac insufficiency or chronic lung diseases. A low level CO leak may take days to cause issues. High levels of CO can cause unconsciousness and death within minutes of exposure, and possibly an explosion. A critical exposure to CO (which has not resulted in death) can be treated with use of a hyperbaric chamber (same device used by divers when they get decompression sickness, or the "bends"). Virginia Mason hospital in Seattle is a regional hyperbaric medicine facility and the most likely destination for serious CO poisoning treatment. If you suspect CO poisoning, do the following: [1] Move everyone to outside fresh air. [2] Call 911. [3] Monitor victim for respiratory problems. [4] Prepare to use emergency rescue breathing or CPR, if needed and if your trained. An EMS response will likely result in oxygen therapy and a rapid assessment to stabilize the patient for transport to a medical facility. Recognizing the primary causes of CO are important:

- [1] DO NOT use any charcoal/coal burning device, such as a barbecue, within a structure for heat or cooking.
- [2] DO NOT warm-up your vehicle within a garage.
- [3] INSPECT the flues and chimneys on all furnaces, water heaters, wood stoves, pellet stoves, fireplaces for leaks, cracks or seal/gasket failures.
- [4] INSPECT any gas cooking ovens for proper burning and venting.
- [5] USE smoke detectors and CO detectors AT ALL TIMES. Test and change batteries as recommended.
- [6] NEVER burn charcoal/coal in a fireplace.
- [7] Have a home fire extinguisher (ABC type) available and know how to use it.

[8] NEVER run a gas generator inside a garage or home. Use the smoking ban rule and keep it at least 25' from any door, window or vent, as far from the house as possible. NEVER refuel it while running or hot.

[9] DO NOT use propane heaters within a house.

[10] Kerosene heaters are NOT encouraged but if used, you must have good cross ventilation, a working CO detector and you shouldn't run them when you are asleep.

[11] ALWAYS have a window opened for ventilation when using a wood/pellet stove/fireplace or any fossil fuel burning device.

[12] NEVER refuel anything within a house or garage.

Additionally, if you use propane (LPG) or natural gas (LNG) with any device, remember this:

Propane is heavier than air and will sink/buildup at ground level.

Natural gas (methane) is slightly lighter than air and will rise or mix with the air.

Gasoline fumes are heavier than air and will sink/buildup at ground level.

If possible, do not store large propane bottles or gasoline containers within your house or garage. Best location is an outbuilding/shed.

Stay safe, we would prefer not to visit you for one of these issues.

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