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Re: Carbon Monoxide

As we begin our winter season let us review the dangers of carbon monoxide and the importance of home detectors.

Carbon Monoxide is a colorless, odorless, and tasteless gas, often referred to as the "SILENT KILLER". It is slightly LIGHTER than air, is caused by the improper/incomplete combustion of fossil or wood fuels. Fossil Fuels include coal, gasoline, kerosene, fuel oil, Natural Gas and Propane.

Breathing CO can cause flu like symptoms, headache, dizziness, vomiting and nausea. CO reduces the ability of red blood cells to carry oxygen from your lungs to the rest of the cells in your body. Instead of carrying oxygen, the blood cells carry CO and depending on the concentration of the CO you breathe, the health threats can be immediate (fatal) or slowly accumulate over time (flu like symptoms). It displaces oxygen in the blood. Small bodies such as children and pets are more susceptible and first to be affected.

Recently the Washburn County Health Department shared with me some incident reporting information that showed Washburn County has 3 ½ times the state average of Carbon monoxide poisoning visits to the emergency room.

The most common way that I see CO problems in the home is with the furnace. Typically it is a cracked heat exchanger that allows exhaust gases to mix with the heated air that circulates inside your home. This crack begins with a slow leak and then becomes wider creating a bigger leak and can be very dangerous. This is a good reason for annual furnace inspections.

I have also seen problems with venting; people take shortcuts and vent the water heater exhaust into the same ductwork as the furnace exhaust, when both are running, the volume of exhaust gases is too much for the exhaust vent opening and this constriction forces CO back into the home.

Fireplaces, whether wood or gas can create CO, if not properly operated and vented.

We have all heard of people losing power to a residence and then using a generator as a power source only to become victims. Too many lives are being lost to this action. Generators MUST NOT be used inside homes.

Homes with attached garages can also be a concern. Exhaust from motorized equipment running can be forced into the home. A common mistake is to leave the car running in the garage, this recently happened in our area.

In winters with deep snow, some exhaust vents can become buried by snow or ice and the exhaust gases can instead, be forced back into the home.

Other gas operated items in the home that can be a problem are stoves, lanterns, grills and portable heaters. These items can also be found in ice shacks this time of year and need to be monitored.

So how do we help protect ourselves? First we should confirm that our heating appliances are operating and vented correctly AND second we should have working Carbon Monoxide Detectors.

Detectors can be purchased at any hardware store. The fire department recommends one that can be plugged into an outlet, has a digital readout and also has battery back-up. Legislation passed in February 2011 requires that there be ONE on each Level of the home. Years ago you may remember the push was to put a detector in the basement furnace room as this was the likely place for a problem to start. The problem was no one would hear it. We now know that it's most important to protect us when we are most vulnerable.... while we are sleeping. This is the reason that state law requires a detector on all levels of the home just like we do with smoke detectors.

### How about a little CO Detector 101?

- Important information is printed on the BACKSIDE of the detector.
- Detectors have a life span of 7-8 years. After reaching the expected lifetime determined by the manufacturers, the CO no longer can be trusted to accurately detect CO since the sensing unit has lost the designed effectiveness.
- The year of manufacture is printed on the backside.
- Manufactures are now making both CO detectors and SMOKE detectors with an END OF LIFE FEATURE built into them that will beep every 30 seconds to notify you. If you have the digital read out it will read "END". Installing a new battery will not stop the beep. The detector must be replaced with a new one.
- Replace the batteries twice a year.
- Digital read out is good as it allows you to see how many parts per million are being read.
- Most detectors are set by the manufacturer to sound the alarm trigger at 35 parts per million (ppm) of air. This is a level which gives occupants advanced warning of a problem with CO so that action can be taken to correct the problem. Toxic effects of carbon monoxide depend on the concentration in the air and the duration that a person is exposed to that concentration. Long term exposure to 200 ppm can cause mild headaches while exposure to 400 ppm can cause a headache in as short as 1 hour. At 800 ppm, headaches happen within 45 minutes, leading to nausea, collapse, and unconsciousness after 2 hours. At 1600 ppm, headache, dizziness, and/nausea after 20 minutes. And at

6400 ppm, dizziness after 1-2 minutes with unconsciousness after 10-15 minutes. This helps explain why a CO detector with a digital readout is recommended.

-Typically, beeping every 5 seconds is notifying you of CO problem, every 30 seconds is a problem with detector itself.

-If you call in to report that your detector is showing 97 on it, the FD will politely tell you that it is plugged in upside down and it's reading Lb, which stands for low battery. And yes, we are most likely smiling as we say it.

Hopefully this information will help you in making good decisions in preventing CO. Remember that when a detector beeps, it takes a little investigation on your part to discover the reason it did before calling the fire department. Similar to smoke detectors, CO detectors can alert falsely. Hair spray, cleaning chemicals and other common products can cause false triggers. Read instructions on the back of detector to be sure it's not a low battery or expiration of detector itself. And if you call the fire department, please remember we are not appliance repairmen and if your appliance is producing CO, you will have to stop using the appliance, you will have to contact your appliance service person to fix the problem, and in the interim, you may have to leave your home.

As always, if you are concerned that you have a Carbon Monoxide Problem, immediately leave the house and call 911 for help.

May everyone be safe this winter season and remember that CO Detectors make great gifts!