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From: Ron Kirschner, MD, Medical Director  
To: ALL HEALTH CARE PROFESSIONALS  
Subject: 'Tis the season for carbon monoxide poisoning  
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- Carbon monoxide (CO) poisoning peaks in winter due to improperly vented furnaces, supplemental heating with stoves or fireplaces, indoor charcoal grilling, and faulty automobile exhaust systems.
- Early symptoms of CO poisoning are nonspecific - headache and nausea are the most common.
- Because members of the same household are often affected, CO poisoning may sometimes be misdiagnosed as a viral infection or flu-like illness.
- Pulse oximetry is an insensitive screening tool for CO poisoning. Co-oximetry is better, but often not available in the ED.
- If CO poisoning is suspected, obtain a venous carboxyhemoglobin (COHb) and provide supplemental oxygen with a non-rebreather mask - this will significantly enhance CO clearance.
- Fetal hemoglobin is thought to have a higher affinity for CO so a longer duration of O<sub>2</sub> therapy is recommended in pregnancy. Consider pregnancy testing for women of child-bearing age.
- COHb levels do not correlate well with toxicity, which also depends on duration of exposure.
- More severely poisoned patients typically present with altered mental status, seizure, syncope, or cardiac ischemia. These patients may benefit from hyperbaric oxygen therapy.
- Patients with more severe exposures can have persistent or delayed neurologic effects. Follow up should be arranged with the primary care physician or other healthcare provider.
- Smoke inhalation from residential fires can result in both CO and cyanide (CN) poisoning. Consider empiric treatment for CN in critically ill fire victims who are unresponsive, have anion gap acidosis, or elevated lactate, as cyanide levels are not available in real time.
- Make sure that the source of the CO has been addressed before patients are discharged. Remind patients that home CO alarms are inexpensive and a wise investment.

#### References

Hampson NB. Myth busting in carbon monoxide poisoning. *Am J Emerg Med*, in press.

Wu PE, Juurlink DN. Five things to know about carbon monoxide poisoning. *CMAJ* 2014; 186: 611.

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