

Testimony of:

Gary D. Zimmer, MD, FACEP
Chairman, Department of Emergency Medicine
St. Mary Medical Center
Langhorne, PA 19047

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Carbon monoxide (CO) kills. It is a colorless, odorless gas that causes the insidious onset of progressive illness and ultimately death. Carbon monoxide is a byproduct of the combustion of coal, wood, gas and many other substances. Carbon monoxide binds to the red blood cells much more strongly than oxygen. As a result, the oxygen that is vital to life cannot attach to the cells because they are already occupied with carbon monoxide. Because of its characteristics, carboxyhemoglobin – the hemoglobin in red blood cells that is bound to carbon monoxide – is red. As a result, patients do not present with the signs of cyanosis – or blue color – as you might expect in a low oxygen state. Even more concerning, pulse oximetry equipment that measures the oxygen level in the blood reports a falsely elevated level. As a result, the “vital signs” are not just unhelpful, they can be absolutely misleading in carbon monoxide exposure.

The symptoms of carbon monoxide poisoning are extremely non-specific. Symptoms range from dizziness, headache, weakness, nausea and vomiting to more ominous findings of confusion, loss of consciousness, seizures and ultimately death. The range of symptoms mimics literally dozens of other illnesses and can easily be missed. It is not until there is a high index of suspicion and significant symptoms that the diagnosis is made. Many emergency departments must obtain an arterial blood sample to measure the amount of carbon monoxide in the blood. At St. Mary Medical Center, we are fortunately to have specialized equipment that measure this level non-invasively.

According to the CDC, carbon monoxide exposure results in 15,000 emergency department visits and 500 unintentional deaths annually (MMWR 54(02);36-39). When counted as a contributing cause of death, as many as 16,000 deaths may be partly attributed to carbon monoxide. Based on the CDC data, the elderly and the very young are at the highest risk of serious morbidity and death.

I remember a case of carbon monoxide poisoning from my training in another state. A large immigrant family was living in a tiny apartment and using the stove and portable devices to heat their dwelling in the winter. There were 3 fatalities that night and 2 infants with permanent, severe brain damage. A simple carbon monoxide detector would have prevented all harm.

In our local community, we receive as many as 50 emergency department cases annually at St. Mary Medical Center with significant carbon monoxide exposure. Each case results in thousands of dollars of healthcare costs, all of which are preventable with effective maintenance of combustion equipment and functioning carbon monoxide detectors. In addition, many other cases of undiagnosed, minor carbon monoxide exposure would be prevented by the early detection of lower levels of carbon monoxide in the air. On behalf of St. Mary Medical Center, I urge you to pass HB2031 and all related measures that would require carbon monoxide detectors in dwellings.