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CO Poisoning in the Blood, But Not in the Air?

The Call: Mother “Not Feeling Well”

In May 2008, Lakewood Fire Department received a 911 call from the son of a 61-year-old female who reported that she was “lethargic” and “not feeling very well.” An EMS unit was dispatched to the home where paramedic/firefighter Phil Hayden began assessing the patient and taking a history while another crew member checked her vital signs. Phil then used the Masimo Rad-57 Pulse CO-Oximeter to obtain her oxygen saturation and check for possible carbon monoxide poisoning. This is part of the department’s standard operating procedure for all patients with nonspecific symptoms.

Masimo Rad-57 Reveals the Culprit

Within seconds, the Rad-57 revealed an elevated CO blood level of 11%—making the diagnosis of carbon monoxide poisoning clear. While enroute to the hospital, Phil administered oxygen via CPAP. At the hospital, the patient’s CO level had decreased to 4%.

Air Meter Fails to Reveal the Danger

Having found elevated CO levels in the patient’s blood, firefighters needed to determine the source of the CO exposure. Suspecting that the patient’s home may have had a faulty stove, firefighters measured the air for elevated CO levels. To their surprise, the Garage/Gas Alarm System-4 (G/GAS-4) failed to detect any CO in the air. As a result, they were unable to confirm the source of the CO exposure. However, thanks to the Rad-57, the team did make an accurate diagnosis of CO poisoning, which may very well have saved the patient’s life.

The Rad-57 is a pretty remarkable tool that not only enables us to immediately detect the presence of CO in the patient’s blood, but also the severity of the poisoning. Our air meters can only detect the amount of CO circulating in the air, which is not always reliable. If the source of the CO exposure, like a faulty gas furnace is turned off, or the windows are opened before we are able to take a measurement, the CO levels in the air can be quite different from what the patient was originally exposed to. It’s only by measuring the actual CO level in the patient’s blood with the Rad-57 that we can accurately determine the presence and extent of carbon monoxide poisoning.



*Here is a picture of Phil Hayden on the left
with partner Tim Devenny*

The goal of the Prevention Division of the Lakewood Fire Department is to minimize injuries, loss of life, and damage to property by educating the public about safe practices and enforcing the fire code. Four personnel are assigned to this division. The Fire Marshal heads the division and reports to the Fire Chief.