

Due Diligence

Dan Steaves
Firefighter

Durango Fire and Rescue Authority
Durango, CO

The Call: Condo Fire

In February 2008, our Durango Fire and Rescue engine was dispatched to a structure fire that had engulfed several condo units at the Durango Mountain Resort. As part of the attack team, I donned my SCBA and worked to knock down the fire and overhaul the damaged condo units. During this period, I did not notice any symptoms that would have suggested that I was suffering from carbon monoxide poisoning.

Masimo Rad-57 Keeps Firefighters Safe at Work

It is standard operating procedure in our department for firefighters to go to rehab after consuming two tanks of air during fire operations. My partner and I rested, got plenty of water, refueled with food and received a physical exam that included vital signs and carbon monoxide (CO) monitoring with the Masimo Rad-57 Pulse CO-Oximeter. To my surprise, I was the only one of the group with an elevated level of CO in my blood. My SpCO level was 5%, but I had no signs or symptoms of CO poisoning.

How was it that I was the only one with an elevated SpCO level when my partner and I were wearing the same SCBA's and exposed to the same conditions? Both of us were sent back to the fire after rehab. Even during our second assessment, my blood CO level remained elevated.

Discovering an Unexpected Hazard

Over the course of the next few days, I became concerned about my elevated CO measurements and wondered what could be causing them. So one day, just out of curiosity, I went to one of our fire stations, and took another SpCO reading with the Rad-57. Surprisingly, I still had an elevated CO

level. Those higher-than-normal CO levels were still in my system after more than a week.

I discussed the issue with some of the captains and they suggested that I inspect my home with one of the department's gas air meters to see if there might be a problem. So, I took a few guys from the department with me to check all the appliances in my home for gas leaks. We soon discovered that my oven was the culprit. When in use, it was putting out somewhere between 30 to 40 parts per million of CO. If this concentration of CO had been detected at the scene of a fire, department procedures would have required us to wear SCBA's. Yet, in my own home I was completely unprotected against this poison.

Masimo Rad-57 Kept This Firefighter Safe at Home

If our department hadn't required rehab along with CO screening after each fire, I may have never discovered that I had elevated CO levels. And, if I had not double-checked my CO level during off-duty hours, I would have assumed that the elevated CO measurements were attributed to smoke inhalation during fire operations. I would have never guessed that the source of the poisoning could have been my own home. Clearly, the Rad-57 made a huge difference for me not just at work, but at home as well. It was vital in both diagnosing my CO poisoning and in helping me to uncover an unidentified CO hazard.



*Dan Steaves, Leo Loyd, John Brennen,
and Charles Talley*

Durango Fire and Rescue is a combination paid and volunteer department providing firefighting and paramedic services in the southwestern part of Colorado. Its primary response area encompasses 385 square miles in La Plata County. In addition, Durango Fire and Rescue ambulances also respond to calls in a neighboring fire protection district, providing ALS transport. The department maintains 16 stations, 3 of which are staffed by paid firefighters and medics with a total of 171 employees and members, while the remaining 13 stations are supported by dedicated volunteers.