March 2020

Carbon Monoxide Poisoning

BACKGROUND AND DAMAGES

A three-person crew, including senior firefighter (supervisor), and two rookie firefighters (Emergency Medical Services - EMS) were en route to a 'lift assist' in the basement of a home. It was a fall evening after a major thunderstorm had taken place, and much of the area was affected by a power outage. As the crew arrived to the home, they immediately exited the medical unit ehicle. The supervisor noticed that the homes along the street looked as if they did not have power. The residents in the house across the street from the scene was running a generator just outside of their open garage door. When the crew approached the front door, the reporting party met them and stated that her husband had fallen in the basement. She also mentioned that she wanted them to tell her neighbors to turn off their generator because it was "too loud" and that she was feeling a little light-headed.

The crew entered the residence and noticed that the home was without power, and a strong smell of an unknown-type odor was present in the home. The supervisor instructed one of the firefighters to get the four-gas meter from the truck, which he did. The supervisor and other firefighter made contact with the patient in the basement and were yelling for the third firefighter to assist them. As the supervisor entered the basement, he noticed there was about one to two inches of water on the concrete floor and could hear the sound of a motor running, which was coming from a far-back room in the basement.

The supervisor observed that the patient was a middle-aged male, lying face down in the water. He was responsive only to pain, his face was beet red, and his eyes were wide open. He was stiff and his upper and lower extremities were ashen. They quickly triaged this patient as a 'code red' (critical), and one of the firefighters ran to get a spinal board to transport the patient and make a quick emergency move up a narrow staircase. By this time, the four-gas monitor began chirping upstairs and the fire-fighter that was getting spinal board had made it back into the home and reported that he was getting carbon monoxide (CO) readings as high as 499 parts per million (PPM) at the front door (the monitor only reads up to 499 PPM). The crew quickly rolled the patient onto the spine board and immediately vacated the residence. The supervisor quickly opened all the windows for natural ventilation and it was at this time he became nauseous and light-headed. It was reported that the crew was inside for less than five minutes and all were all feeling the effects of the extremely high CO levels. The ambulance crew was now experiencing difficulty with patient care and at that time, the supervisor decided to request additional fire and EMS personnel to the scene. The engine arrived on scene with two other firefighters, a second ambulance, a crew of two and the department chief. Two firefighters in SCBA entered the residence to find the cause of the CO. They found a generator running in one of the back rooms in the basement and shut it off. The chief then requested two additional ambulances for treatment of the first responders. All three of the initial responders along with the patient and the wife were transported to the hospital for evaluation.

INVESTIGATION

The patient was transferred to a hospital an hour away for a higher-level of care and stayed there for about a week. The hospital said that he had about 44% CO content in his blood at the time of arrival and his wife had about 20% upon her arrival. The wife was treated at the local hospital and released the next day. The two firefighters and supervisor ended up receiving medical treat-ment for elevated CO levels in their system and were released that evening. A return follow-up was required 72 hours after and a mandated release from duty was initiated until the follow-up was proven clear.

The supervisor's accident review identified the below contributing factors:

- The crew entered the structure for a routine 'lift assist' without proper equipment
- The crew as a whole should have vacated the area, once the meter was activated
- Immediate notification for additional resources should have been requested
- Proper SCBA should have been to "open windows"

CIRMA LIABILITY ASSESSMENT

CIRMA is 100% responsible for this work-related incident. The total direct cost of this claim, including medical expenses, totaled $110,000.

– Continued next page

KEY RECOMMENDATIONS/ACTION ITEMS

CIRMA Risk Management has provided feedback based on recommendations from the Fire Service Task Force Committee on best practices to reduce liability associated with this type of claim.

- Review situational awareness guidelines and best practices for all first responders.
- Establish educational and procedural guidelines for this type of specific incident.
- Purchase single-use CO meters for all first-responder jump kits.
- Share information with additional first responder organizations (police and ambulance departments).
- Review current in-house procedures related to running apparatuses in or near bay entry ways.

Questions on this topic? Ask your Supervisor or contact your CIRMA Risk Management Consultant at (203) 946-3700.

Connecticut Interlocal Risk Management Agency
545 Long Wharf Drive, 8th Floor
New Haven, CT 06511
www.CIRMA.org