

After Action Review: 5178 Granby Street



Date: 04/11/2020 Time: 1004 Incident Number: 20-36969

Address: 5178 Granby Street

Overview

On April 11, 2020, at 1004 hrs., Truck 2 responded to a reported medical incident regarding a cardiac arrest, at the address of 5178 Granby street, a single-family dwelling. Upon arrival, at 1008 hrs., Truck 2 personnel, dressed in proper COVID 19 Personal Protective Equipment (PPE), began to “size-up” the situation. The firefighter riding in the fourth position, dressed in COVID 19 PPE, approached the front door of 5178 Granby street, with the officer of Truck 2, line of sight, making initial contact with the four people inside the dwelling. The situation, as described, was “chaotic” with initial language barriers. During this interaction, it was identified that before the 911 call, three members, still in the basement, were doing demolition work with a K-12, gas-powered saw, and one fell unconscious. The officer of Truck 2 made the decision to

After Action Review: 5178 Granby Street

accompany the firefighter into the basement to assess the situation and initiate further treatment, leaving the remaining two firefighters outside.

Once the officer and firefighter gained access to the basement, they immediately noticed a “dusty and smoky” atmosphere, “banked down to the floor,” with CPR in progress in a crawl space. At 1012 hrs., the officer of Truck 2 contacted Denver Fire Dispatch and upgraded the response to a Carbon Monoxide incident. Tower 27 and Chief 5 were added to the call. Following the upgrade request, the officer did a Risk/Benefit analysis and decided to initiate the extraction of the three people in the basement to the front yard, where CPR would continue. The officer called for the balance of the Truck 2 crew to enter the building, while he went to get a backboard for the patient in cardiac arrest. No one from Truck 2 donned their SCBA. One Denver Health Paramedic and one Denver Police Officer also entered the basement.

At 1016 hrs., Truck 2 contacted Denver Fire Dispatch with the benchmark of all parties evacuated from the building, with CPR still in progress. The officer of Truck 2 instructed the engineer to start Positive Pressure Ventilation (PPV) of the building and then assisted the crew with CPR. Chief 5, while still in-route, requested an upgraded response of a Confined Space Rescue. Once Truck 2 confirmed all people were out of the building, the response was downgraded to just Rescue 2, in addition to Tower 27 already responding.

At 1019 hrs., Chief 5 and Tower 27 arrived on the scene, and Chief 5 assumed Command. Command directed Tower 27 to enter the dwelling and monitor for Carbon Monoxide (CO) levels. Tower 27 complied with the order and entered the building. At 1026 hrs., the crew of Tower 27 contacted Command, reporting 70 Parts Per Million (PPM) and climbing of CO and 7 PPM of Hydrogen Sulfide. Tower 27 then called Command, stating they were “masking up” and headed to the basement to continue their survey. At 1027 hrs., Tower 27 reported that their CO meter had peaked at 500 PPM. Command acknowledged and instructed them to exit the building and ventilate the house.

At 1030 hrs., Command asked Denver Fire Dispatch to contact OPS-2, making notification of a Mass Casualty Incident (MCI), with three green and two red. OPS-2 was added to the call and responded to the scene.

Once the scene was stabilized, the crew of Truck 2 was evaluated by Denver Health Paramedics, and the decision to transport the entire crew for further medical evaluation and oxygen therapy was made and executed.

After Action Review: 5178 Granby Street

Risk vs Benefit: Two-story with a basement, light weight wood construction, single family home with reported CPR in progress in the basement, following a demolition project

Units Dispatched: T2

First Arriving Unit(s): T2

Additional Units Requested: Tr27, R02, D05, OPS-2

Initial Assignments:

IC: T2

Medical: T2

Extraction: T2

Initial Strategy: Extract and evacuation of occupants and continue CPR in a fresh-air environment.

Communications: TAC 5

Special Challenges, Hazards, and Safety Issues:

Carbon Monoxide more than 9 ppm

Crawl Space

Dust and Smoke

Limited Access

Command Structure:

IC: D05

After Action Review: 5178 Granby Street



After Action Review: 5178 Granby Street

Evaluation and Summary

- 1. Tactical Priorities**
- 2. Positive Outcomes**
- 3. Additional Considerations**
- 4. Recommendations**
- 5. Safety considerations**

Tactical Priorities: Extract and evacuation of occupants and continue CPR in a fresh-air environment.

Positive Outcomes:

- Three patients rapidly extracted from the building and continuation of successful CPR.
- Rapid identification of a potential IDLH atmosphere and call for an upgraded response
- Good coordination of traffic control with Incident Commander, DPD and DHH

Additional Considerations:

- Once IDLH atmosphere is suspected, rapid deployment of meters to validate concentrations in air, to quantify the Risk, with donning of SCBA prior to entry, or re-entry.
- CO meters deployed on medical bags, turned on all medical incidents as per policy 2111.22
- Implement effective tracking, maintenance and replacement of CO meter inventory. (in progress)
- When entering a building for suspected IDLH concerns such as increased levels of CO, crews should don appropriate PPE and SCBA prior to entry, not once the meter gives you a reading.

Recommendations:

- Overhaul of the CO, medical bag meter program, with follow-on training and reminders for service.
- When evaluating the “Risk”, take into consideration of why DFD was called to the scene. In this incident, the decision to evacuate the building without members on-air, with SCBA, was not a “Best Practice” approach.

After Action Review: 5178 Granby Street

Safety considerations:

- Carbon Monoxide is a colorless, odorless gas, which can become toxic at relatively low levels. The Environmental Protection Agency lists 8 PPM of CO for continued occupancy in a private residence, not to exceed 8-hours as acceptable. For a commercial structure, that level increases to 35 PPM, with an 8-10-hour workday. On this incident, it was rapidly identified as a potential CO issue, with a party already unconscious, indicating levels well above 8-35 ppm. SCBA should have been donned first, then the pending rescues/ evacuation of occupants. Second, follow on companies assigned to a CO incident involving potential IDLH atmospheres, need to gain an awareness of the scene they are on. An MCI, involving CO, with three Green and two Red patients, should have signaled the crew of Tower 27 to be on-air before entering the dwelling.
- CO meters are assigned to all companies in the Operations Division, SOG 2112.22, with the intent for them to be attached to the medical bag and turned on. During this investigation, it was identified that not all companies currently have there required CO meter, and a plan to repair and replace those meters is in progress. Truck 2 did not have a CO meter at the time of this incident.

Summary:

It is important to recognize the heroic efforts of the members who operated on the scene of 5178 Granby Street. The fact that they did evacuate the building and administered successful CPR is what we expect. However, the expectation is to do so with the proper PPE and SCBA. Taking a few more seconds to do a Risk/Benefit analysis, identify hazards, and dress in appropriate PPE and SCBA is always going to be the “Best Practice” and expectation of the Operations Division. All four members of Truck 2 were transported for further medical evaluation and oxygen therapy. All four were able to return to work that shift, with no restrictions.

IDLH of Carbon Monoxide: 1250 PPM

<u>CO Levels in PPM</u>	<u>Resulting Conditions/ Symptoms/ Exposure Time</u>
200	Headache in 2-3 hours
400	Headache and Nausea in 2-3 hours
800	Possible collapse in 45 minutes
1600	Possible Death in 60 minutes
3200	Possible Death in 30 minutes
6400	Possible Death in 10-15 minutes

After Action Review: 5178 Granby Street



After Action Review: 5178 Granby Street

