Incident Name: Arizona Engine Work Capacity Test Rhabdo Case (2018)

State: Arizona

Date: 4/19/18

Incident Type: Medical or Exertion or Heat

Description of the incident:

The fire district conducts its WCT at a local high school running track (track is flat and paved, with one lap equal to ¼ mile) using commercially available 45lb weight vests. Two NWCG qualified engine bosses were on site as proctors. Additionally, the fire district utilizes certified peer fitness trainers (PFT), and one PFT was also on site monitoring the test. The patient began the test and had no initial complaints. As the test progressed, the patient engaged in more exertion. He later described the exertion as extremely challenging, but no more challenging than previous WCT's. Just before beginning the last lap, the patient later stated that his lower legs were sore and painful, that he was experiencing fatigue, and that he became increasingly disoriented. Co-workers noticed the increased exertion, but did not believe it was out of the ordinary. During the final lap, the patient later stated he saw black spots and was afraid of passing out. Upon completing the WCT, the patient appeared to co-workers to be extremely pale and in need of assistance. One of the engine boss proctors thought the patient appeared ashen. His weight vest was removed and he was immediately placed into a paramedic ambulance which was on site. Treatment was initiated by fire district paramedics.

The patient was placed on a cardiac monitor and an IV of normal saline was initiated. Cold packs were placed on the patient, his shirt and socks were removed, and the air conditioning in the ambulance was turned on. His chief complaint was pain in his lower legs. He was given oxygen via nasal cannula. After several minutes of monitoring with little signs of improvement, the patient was transported to a local emergency department at a large hospital. The patient asked ER staff to check him for rhabdomyolysis and compartment syndrome. The patient was quickly diagnosed with rhabdo, but ER staff did not check for compartment syndrome. The patient was admitted and spent 7 days in the hospital. He was diagnosed on day 5 with compartment syndrome by an orthopedic surgeon, and had fasciotomies performed on both calves that day to relieve the pressure. He is expected to be out of work for 3-6 months, and may require additional surgeries.

A creatine phosphokinase test was administered, with the highest recorded reading of 10,000 micrograms per liter CPK level.

May 17, 2018 Update:

The patient was re-admitted to the hospital on May 17, 2018. He was experiencing a fever and doctors feared an infection. He was taken to the operating room for debriding and irrigation of his lower legs.