Rapid Lesson Sharing

Event Type: Burn Injury

Date: February 7, 2023

Location: Wolf Creek Rx,
Unaka Ranger District,
Cherokee National Forest,
Tennessee

"It felt like I was breathing heat."

FFT2 Wolf Creek Rx

Background

On February 7, the Unaka Ranger District conducted the Wolf Creek Prescribed Fire (Rx). The Rx area was a 51-acre wildlife opening that had a mechanically "mowed line" around the perimeter, which transitioned into light flashy fuels toward the interior.

The Prescribed Fire Burn Boss Trainee [RXB(T)] chose to use Utility Terrain Vehicles (UTV) with water tanks and pumps to establish a "wet line" in the middle of the mowed line.

As the drip torches established a line of fire, the UTVs contained one side of the fireline in the mowed grass with water. The fire transitioned into the light flashy fuels toward the interior. These fuels consisted mostly of grass with some brush. The UTVs were keeping fire out of brushier fuels and inside the established perimeter. Even though the Rx's topography consisted of a moderate hillside, the Burn Boss (RXB2) could see everyone from the perimeter.

Burning the Unit

As the two ignitors lit the perimeter in opposite directions, they tied-in toward the middle, on the unit's other end. A Type 2 Firefighter (FFT2), part of the District's fire militia, was using the hose on the UTV to work the "wet line" and keep the fire out of the brush.

Working with the UTV module, the FFT2 continued to work around the perimeter as they all came to an uphill portion of the Rx. The ignitor that the FFT2 was working behind began to tie-in with the fire approaching from the opposite direction. FFT2 noticed that this piece of line was becoming increasingly hot from the two fire lines coming together.

Inhaling Hot Gasses

As FFT2 was working uphill, the two fire lines came together. The change in slope and terrain—and increased fire behavior—all aligned quickly where the FFT2 was standing. Although FFT2 was adjacent to the fireline, the light flashy fuels ignited quickly and caught the FFT2 in between these two sections of increasing fire behavior.

As crew members called for them to *"Get out of there!"* FFT2 inhaled hot gasses. FFT2 recalls: *"It felt like breathing heat."*

Initial Assessment and AAR

As FFT2 stepped away from the line, they could tell that their throat was sore. However, this was not an uncommon occurrence. They recalled not being too concerned at that time. FFT2 asked several other firefighters on the line if their throats were also sore. The general agreement was that FFT2's symptoms were from the smoke.

At that time, there were no other obvious injuries that indicated a need for additional medical care. FFT2 continued to work on the line—feeling that there wasn't any cause for concern. As the day went on, they crews completed the Rx and conducted an After Action Review (AAR). FFT2 did not mention inhaling hot gas or smoke at the AAR, recalling that, at that time, the event did not seem unusual.

Recognizing a Burn
Later in the evening, FFT2 recalled that their throat was still sore. A family member noticed blisters on the back of their throat. At this point, due to these blisters, FFT2 thought they might be coming down with strep throat. The discomfort continued the next day. On the following day, two days after the Rx, FFT2 contacted their primary care physician (PCP), still believing that it was an illness.

FFT2's PCP ruled out strep and conducted additional tests that determined the FFT2 had received burns to the back of their throat from the Rx. They were treated by their PCP and arranged a follow-up in a few weeks.

Reporting the Injury
As soon as they were informed that this was a burn injury, FFT2 reported this to their supervisor. An eSafety CA-2 was submitted on the January 9 (same day FFT2 visited their PCP). At this time, FFT2 also reported the injury to the RXB(T).

Because the injury had happened several days prior to the initial notification, the District's FMO (Fire Management Officer) and Assistant Fire Management Officer (AFMO) recalled some confusion in reporting. They discussed the changes in the 2023 Red Book, finding these "very confusing" and "not user friendly" regarding their responsibilities for treatment or reporting requirements. They notified the District Ranger of this incident, as well as other personnel they felt needed to know.

After the eSafety was submitted, the unit's Risk Management Officer was made aware and attended a unit safety briefing in which FFT2 described the events and documented some initial lessons learned.

Lessons Learned

1- **When to report an incident or injury.** It is important to understand reporting responsibilities at all levels of firefighting.
   a. **Firefighter responsibility.** Firefighters should be encouraged to report any incident to their supervisor, as well as their supervisor at the time of the incident. Minor injuries may go unnoticed, yet they may progressively get worse. Having clear, concise instructions on reporting will help to eliminate any delay or confusion, as well as ensure the person is treated as soon as possible.
   b. **Burn Boss/Supervisor Responsibility.** Supervisors need to report the information using their unit-specific protocols as soon as possible. Having written and accessible protocols for all supervisors will limit the amount of confusion during "odd/unusual" events. In this case, FFT2 had a separate supervisor, adding to the level of the reporting required. The AFMO was temporarily "acting" in this position and had to reference additional policy that they did not immediately have. Information slowly trickled out to all the responsible personnel, and further up the line.
   c. **Duty Officer Responsibility.** Duty Officers have several contacts to make within their unit (Forest Supervisor, Safety Officer, Hospital Liaison, Family Liaison, etc.) as well as communicating with the Regional Duty Officer (see R8 RFDO Reporting Requirements). It is important that all Unit SOPs and Regional SOPs notifications are made in a timely fashion to prevent the "communication rush" during critical events. In this incident, the "slow roll" of information from an "odd event" increased the delay in notifications that led to confusion as to who had been notified and when.

2- **Identify the increased risk during operational briefings when using firelines such as "mowed lines" or "mash lines"—or something other than mineral earth.** Firefighters need to know the additional risk associated with their tasks—in this case the holding lines in mowed grass. Although a disc-line was considered earlier, the RXB and RXB(T) decided that a mow line

would be adequate and that it did not increase any holding concerns. However, the transition in fuels left FFT2 in an area of light flashy fuels while using a wet line. Briefing the hazard of working in the light flashy fuels in these transitions makes firefighters aware of the risk.

3- **Understanding burn consults and referrals.** Injuries that seem insignificant at the time may grow to be something critical later. Firefighters' burn injuries are often misdiagnosed in ERs or by PCPs. The U.S. Forest Service has a physician's letter available to help firefighters at all levels have a burn consult conversation (see Burn Center Consultation Protocols). Units need to make this letter available and known to all firefighters.

4- **Units need to discuss the updated 2023 Red Book changes and determine how they work within their current unit medical response plan.** The change in the 2023 Red Book was reported by the FMO and AFMO as "very confusing" and not "user friendly." Units need to understand these new changes and realize that their unit can be more specific and restrictive than the Red Book—if they are meeting the minimum objectives. Discussing the changes early will help reduce confusion during an incident.

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