



Managing Wildfire Suppression and Safeguarding Crews from COVID-19 Exposures: Are These Goals Mutually Exclusive?

*The threat of community impact from a wildfire has been deemed more significant than the threat of community spread from a potential exposure to COVID-19.
What size of outbreak or degree of hospitalization will it take to change this dynamic?
It's not a matter of "if it will happen." It's a matter of "when."*

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1. Background

The Humboldt-Toiyabe National Forest recently acquired two “surge helicopters” in spring 2020 to enhance capability for aggressive initial attack on wildfire breaks within the Forest. Fully staffing these helicopters (Type 1 and Type 2 – standard operations) in addition to the Type 3 ship already present extended the existing helitack crew and would require outside personnel.

The formal “fire hire” process was completed months ago and local reinforcements were not available. Therefore, the chosen course of action was to bring in seven out-of-state detailers to round-out the crew. These individuals were from Region 6 (Washington/Oregon) and Region 8 (Southeast United States), the *majority* of whom were known entities having previously worked on the Humboldt-Toiyabe National Forest.

Health screening and other COVID-19 precautions were completed by each detailer at their home base before arriving at District facilities on June 13/14, bringing the total crew size to 20. The Type 2 ship arrived June 14, ready for service the next day; the Type 1 ship arrived on June 16.

Crew activities including vehicle/helicopter familiarization, bucket drills, safety briefings and general info sharing occurred on June 15, mostly taking place outdoors or inside the spacious hangar. Individuals largely maintained social distancing during these exercises, but no face coverings were worn and some incursion by crew into common spaces and shared restrooms occurred. It was a mostly uneventful day, except for the Murphy Fire that started late that evening.

The detailer complained to the helicopter manager that they were experiencing fever and chills, telltale symptoms of COVID-19.

2. COVID-19 Symptoms Appear

June 16 developed into a much different day. Resources, including a Type 2 helicopter and crew, were ordered to support the Murphy Fire, located north of Bridgeport, Calif. By the time the ship arrived over the incident the fire was well in hand, so the ship and support vehicles were assigned to standby at Bryant Field in Bridgeport.

Around noon, the former Murphy IC came by to request the helitack crew record a GPS track of the fire in Collector (the mobile data collection app). The two support vehicle drivers (one detailer, one helitack crew member) agreed to do this. They drove together in a single vehicle to the fire to collect the data.

After sharing this vehicle for nearly an hour, intending to use Collector to map boundaries (not fulfilled), they returned to Bridgeport to continue standing by. At this time, the detailer complained to the helicopter manager that they were experiencing fever and chills, telltale symptoms of COVID-19. This individual self-isolated in one of the support vehicles for several hours until the ship and crew were released back to Minden Airport.

Later that evening, the detailer returned to the helibase to drop off the Govt. rig used that day, then got in a rental vehicle with two other crew for their trip back to their hotel. No face coverings were worn during this trip. The Govt. vehicles that were used by the detailer during the day were sanitized according to recognized COVID-19 hygiene protocols the next morning—as were common high-touch surfaces at the hangar. The hangar is a large, open-air environment with good natural ventilation and was not deemed a significant risk requiring thorough deep-cleaning.

The symptomatic individual was well enough to drive himself to the county testing location the morning of June 17. A standard three-to-five day viral test was administered. The individual promptly returned to their hotel room and was told to remain in quarantine until test results were received.

The other three crew members exposed to the symptomatic individual were not immediately tested because of the multiple day incubation time associated with the virus and the likelihood that even if present the viral infection would be present in such small quantities it could escape detection. This was the third helitack crew member to be tested in the last couple weeks. Therefore, the apparent regularity of this process may have introduced a relaxed mood within the crew, not to mention the two previous negative test results.

During the day of June 17, the rest of the crew was engaged in a long-line training classroom session in the spacious hangar. A local dispatcher who needed to update his quals on this skill knowingly joined the session after being briefed regarding the recently transpired events with the symptomatic detailer. The dispatcher did not attend the hands-on portion of this training the following day. The crew continued work within their regular “family unit” the next several days, but did not specifically self-isolate at home after hours. No other outsiders commingled with the crew during this timeframe.

3. Waiting for COVID-19 Test Results – A Fire Breaks Out

June 19 was a routine day with no new intel on the test results nor interactions between the crew and outside individuals. June 20 was a bit more frenzied. The Hardscrabble Fire broke out north of Reno in the Pyramid Lake area and the Type 1 and Type 3 ships were ordered to respond.

The Type 1 ship is staffed solely by vendor personnel, no Forest Service personnel travel in the ship, and the managers complete their paperwork remotely. The Type 3 ship arrived with three helitack crew and the pilot aboard along with a support vehicle and two firefighters. A vendor fuel truck and driver also arrived. All of these resources converged at the site in mid-afternoon, before 1500.

The Type 1 ship never landed at the fire camp, it stayed aloft doing bucket work on the fire. When finished, this ship returned to the Minden hangar and overnighted. No interaction of any kind occurred between the Type 1 crew and other personnel at the fire. New resource orders directed the ship, its crew, and the heli managers to mobilize to Colorado the next day.

The Type 3 ship landed at the Hardscrabble Fire. The three helitack crew hooked-up the bucket and the helicopter manager interacted briefly with a single individual of unknown affiliation. The fire was initially managed by an IC from the Bureau of Indian Affairs, but later transitioned to a Bureau of Land Management command structure.

The support vehicle with two firefighters aboard (one of whom had been in close contact with the symptomatic individual) and the vendor fuel truck driver parked at a location away from camp. They had a brief discussion to decide the best location to park the fuel truck to refuel and provide service to the helicopter. Social distance was maintained during this conversation.

The helicopter manager later interacted with the BLM IC discussing logistics and support tactics for the helicopter. The two firefighters advanced to the fireline but stayed segregated and avoided interaction with other personnel. The three helitack crew who had hooked-up the bucket worked a portion of the fireline, remaining largely inaccessible to other suppression crew. This tactic helped maintain social distancing, however a brief encounter with a single individual from the BIA crew still occurred, without incident.

The Type 3 ship and helitack crew left the fire around 2000 to return to Stead, Nevada, awaiting further direction. The remaining two firefighters left the Hardscrabble Fire camp around 2030 and drove back to Stead. A relief driver joined for this trip but was not informed that one of the two occupants had been in recent contact with a symptomatic individual. Interaction between these three individuals was minimal, but no face coverings were worn.

Once at Stead, none of the helitack crew or firefighters entered the buildings. Debriefings were completed outdoors and porta-pottys were utilized. The five crew members then drove in a single vehicle (with no face coverings) to overnight at a Reno hotel. Vendor personnel drove a separate vehicle to the same location.

The Hardscrabble Fire was contained the night of June 20. The Type 3 ship and support crew were released the next morning. The five helitack personnel returned to Stead to retrieve the helicopter; three crew returned to the Minden hangar in the ship, the other two driving the support vehicle.

Prior to this mobilization, the helicopter manager had a 20-minute conversation with the Stead tanker base director, maintaining social distance the entire time (but no face coverings worn). Drivers changed between the night of June 20 and the morning of June 21, during which routine vehicle hygiene did not occur.

4. More Fire Followed by Test Results – Another Crazy Day

While the Hardscrabble Fire crews were returning to Minden the morning of the June 21, the Type 1 ship with three vendors aboard and the helicopter managers in their Govt. rig began their separate journeys to the San Juan National Forest in Cortez, Colo. Resource orders originating from the National Interagency Coordination Center (NICC) determined a greater need for this ship existed on the San Juan NF in Colorado than on-call in Nevada.

The two helicopter managers drove as far as Provo, Utah that night, the Type 1 ship making it all the way to Cortez. The managers were notified by the captain of the Bridgeport Helitack crew that the symptomatic individual tested on June 17 came back COVID-19 positive.

These managers then notified U.S. Forest Service personnel in Region 2 and the helicopter vendor in Cortez of this development. The two managers were able to make appointments for their own testing in Provo the morning of June 22. The managers arrived in Cortez the morning of June 23 and were directed by the Acting Forest

Aviation Officer to take another test in Durango, Colo. The pilots decided to wait for results of these managers' tests before getting tested themselves individually. The pilots and crew chief rarely interacted with the principal Bridgeport helitack crew in Minden. The managers isolated at their motel until test results were known.

Helicopter Crash and Subsequent Fire Outside Helitack Crew's Hangar

The Type 3 personnel had rejoined the helitack crew in Minden the morning of the June 21. By 1100, the positive test results from the symptomatic individual tested on June 17 were in hand. A meeting ensued to discuss options and next steps. But before this meeting ended, a private helicopter crashed at the Minden airport, literally outside the door of the helitack crews' hangar.

A small grass fire accompanied this crash, prompting the need for immediate response. Fortunately, the local East Fork Fire District has a nearby presence and was able to assist. The helitack captain briefed the East Fork Battalion Chief of the positive test result and its potential impact to responding personnel. A decision was made to keep each agencies' personnel segregated while responding to the two incidents. Helitack/firefighters from Bridgeport suppressed the fire while East Fork personnel tended to the helicopter crash and its occupants' injuries. The 0.5 acre fire took less than an hour to suppress. An After-Action Review was completed and by 1430 the book was closed on these two incidents.

Meanwhile, at that meeting to discuss options, it was decided that three of the 13 Bridgeport helitack crew were most at risk from their personal exposure in vehicles shared earlier in the week with the COVID-19 positive individual. These personnel therefore left Minden in a single vehicle en route to Carson City to find a testing location that would accommodate asymptomatic individuals.

Public Health Outlets Refuse to Address Asymptomatic Individuals

The Quad County Public Health website that was queried listed several testing locations open on Sunday. But none of them would address asymptomatic individuals, even though they were wildland firefighters ("essential personnel"). The firefighters returned to Minden after their exhaustive search and notified their superiors of the failed effort. The Bridgeport Fire Management Officer caught wind of this development and quickly conferred with the Battalion Chief for the East Fork Fire about this predicament.

The Chief had contacts within the Quad County Public Health system and explained that wildland firefighters are first responders and should get priority treatment when testing is needed. Carson Valley Public Health was contacted and agreed to make testing available on June 22 for the entire helitack crew, including detailers and vendors on Monday. They provided rapid tests and standard tests to 20 individuals at no charge.

5. Test Results and Next Steps

Personnel were tested on June 22. Each test appointment was 15 minutes long, beginning at 0945 and ending at 1600. Personnel were organized so that crew assigned to the Type 3 ship were tested prior to noon, and crew assigned to the Type 2 ship were all tested after 1300. This scheduling was done to keep at least one helicopter available for initial attack throughout the day.

Everyone drove themselves to the testing location. Rapid test results were available within 15-30 minutes after testing. The standard test results were not available for 3-5 days. Of the three individuals believed to be most at-risk due to their exposure, rapid test results revealed one confirmed positive for COVID-19. The other 19 personnel all tested negative.

Coincidentally, the helitack crew member who tested positive had become symptomatic the morning of the test (June 22). He was taken back to the same hotel as the first COVID-19 positive individual and told to quarantine for 14 days. Both personnel testing positive had checked into this hotel upon arrival to Reno on June 14. No additional notification to the hotel about their new COVID status was provided. Both individuals in quarantine will be provided their daily needs so they can remain in their rooms. Neither individual required hospitalization nor medical assistance. The agency is paying for these rooms.

Third Individual Tests Positive

Once alerted to the positive test result reported on June 22, the dispatcher who had joined the training exercise on June 17 began their own self-imposed isolation. He obtained a standard COVID test on June 24 through Washoe County Public Health. Results obtained three days later revealed the third COVID-19 positive case from this cluster of individuals.

Coworkers of this individual at the dispatch center were immediately notified of this positive result, but as none of these individuals were symptomatic, only half of the individuals (4 people) opted for testing through Quad County Public Health. As of July 10, all four of these test results were negative.

As the dispatch center is an integral cog in the fire suppression business (the weekend of June 27-28 was extremely busy with multiple new fire starts), it necessarily can't stand down for deep-cleaning. Thorough cleaning of touch surfaces in the workspace and common spaces used by the positively tested dispatcher was completed.

The inability to get timely COVID-19 testing for wildland firefighters without local intervention raised concerns within the Nevada Department of Emergency Management, tasked by the Governor's office to lead the State's COVID response.

Decision Made to Temporarily Suspend Helitack Operations

The Helitack Program Manager decided to suspend operations initially for seven days and then extended that to 14 days, asking everyone who was tested to act like they were presumptive positive and self-isolate in their homes. They were also asked to be socially responsible during this time.

Crew members living in a home with high-risk individuals were given the opportunity to stay in a hotel room rather than potentially expose these folks, an expense paid for by the agency. This hiatus will allow adequate time for any residual trace of the virus within the hangar, vehicles or helicopters to die. Detailers were released back to their home units.

The inability to get timely COVID-19 testing for wildland firefighters without local intervention raised concerns within the Nevada Department of Emergency Management (NDEM), tasked by the Governor's office to lead the State's COVID response. NDEM reached out to the Nevada Department of Forestry to gain some intel about the testing gap and was informed the problem also included wildland firefighters within the Forest Service and Bureau of Land Management. An interagency meeting occurred and a process was developed whereby when testing issues arise, the Forest Duty Officer contacts the Nevada Department of Forestry who, in turn, contacts NDEM who can push the local public health district to provide the needed tests. This solution will be implemented throughout the State of Nevada.

As of Monday June 29, results from the standard tests on the principal helitack crew returned negative, including the two helicopter managers tested in Provo, Utah.

6. Epilogue

Managing COVID-19 in the wildfire suppression environment is an exercise in trade-offs. There are very specific isolation protocols developed to manage people potentially exposed to COVID-19 to minimize additional spread. These protocols do not consider whether the potentially exposed individual is asymptomatic or symptomatic, just that they have been in close contact with the individual (less than social distance guidelines) for a duration approaching 10 minutes.

Successful response to wildfire requires a team of trained individuals to be ready in a moment's notice to fully engage in their respective role—no excuses. Substitutions due to precautionary isolation of essential team

members don't exist; hiring practices and staffing constraints limit the number of individuals that comprise helitack crews, dispatch operations, fire modules, etc. When one person goes down, it has the potential to trickle-down to the entire team.

The threat of community impact from a wildfire has been deemed more significant than the threat of community spread from a potential exposure to COVID-19. What size of outbreak or degree of hospitalization will it take to change this dynamic?

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7. Lessons Learned/Key Issues to Consider

- ❖ Drive separate vehicles rather than a shared vehicle to COVID-19 testing locations, especially for individuals most at risk due to their exposure to the positive COVID individual.
- ❖ Use POVs for testing mobilization rather than Govt. rigs, when available, to avoid the need to return to workplace if positive test results are obtained.
- ❖ Face coverings should be worn when multiple persons ride in the same vehicle, especially when one is symptomatic.
- ❖ COVID documentation is voluminous when considered at a national, regional and local scale. A unified guidance document and playbook applied locally would prevent confusion to those that use this information.
- ❖ Managing personnel in travel status to their next assignment across GACC boundaries is confusing. The responsibilities between NICC and the ordering unit need clarification.
- ❖ Evaluating risk of "spreading a COVID problem" to the benefit gained after mobilizing/pre-staging a national resource is unclear. Make sure the intent of these mobilizations is clear before it happens and appropriate mitigation is in place when it occurs.
- ❖ COVID-19 testing protocol for wildland firefighters in each county on the Forest should be compiled and distributed. Wildland firefighters should be recognized as "essential" first responders in each jurisdiction to ensure that they receive expedited testing.
- ❖ Testing is a snapshot in time and not always accurate if an exposure occurred and a person is tested too soon, while pre-symptomatic. This timing may lead to a false negative, a very plausible occurrence.
- ❖ Perspectives on managing "national" fire resources and mitigating potential COVID-19 exposures have the appearance of being in direct conflict with each other. Should there be borders around these resources during a pandemic?
- ❖ There is a trade-off between running helicopters with "limited" crew with local resources versus running with a standard crew using imported resources, especially when those imported resources come from a COVID hot spot. Should outsiders be accepted into a family unit? Should exceptions to quarantine protocol for "essential" resources be allowed?
- ❖ Contact logs should be initiated early to implement thorough contact tracing after someone becomes symptomatic or tests positive.

- ❖ A COVID-19 checklist should be in place to provide an organized approach to the various response tactics.
- ❖ Once a COVID-19 positive test result is obtained, managers need a consistent answer as to how long an individual must quarantine before returning to work.
- ❖ County health professionals did not get involved in the contact tracing aspect of this case as anticipated.

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