

The Strep Throat Outbreak on the Frye Fire

What Do You Do When an Infectious Disease Outbreak Hits Your Fire?

This is the story of how this medical Incident-Within-an-Incident was managed. It includes a chronological narrative, a discussion of key issues and decisions, future recommendations, and sharing what went right.

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Streptococcal Pharyngitis, also known as Strep Throat, is an infection of the back of the throat, including the tonsils. Common symptoms include fever, sore throat, red tonsils, and enlarged lymph nodes in the neck. A headache and nausea or vomiting may also occur. Symptoms typically begin one to three days after exposure and last from seven to ten days. Strep Throat affects approximately three million people in the U.S. each year. It is treatable by medical professionals and often requires lab tests to confirm its presence. (Photo from Wikipedia.)

1. Medical Incident Summary

Friday/Saturday, June 16-17, 2017

On the morning of Friday, June 16 on the Frye Fire, the Gila/Las Cruces Type 3 Incident Management Team's Medical Unit at the Columbine Spike Camp began getting a rapid influx of firefighters complaining of an unknown illness. This Spike Camp was located up on Mt.

Graham—two-plus hours away from the Incident Command Post (ICP). No one had complained of illness down in Safford, Arizona at the ICP. Therefore, this illness appeared to be isolated at the Spike Camp on top of Mt. Graham.

On Friday, June 16, the Crew Boss of a 20-person crew brought some of his crewmembers into the Medical Unit at the Columbine Spike Camp to be evaluated for an unknown illness. These individuals who were being evaluated were complaining of body aches, sore throats, fever, and fatigue.

A Paramedic working at the Medical Unit began assessing these individuals one at a time. After he finished his assessments, he concluded that these individuals appeared to be suffering from Strep Throat. The Medical Unit

A “Doc in a Box” strategy was discussed and determined to be the best course of treatment for all personnel at Spike Camp. That way, the potential for the infection to be spread around the nearby city of Safford as well as overwhelming the local hospital would be prevented.

Leader instructed the Crew Boss to take his crew to the Mt. Graham Regional Medical Center for further evaluation and treatment. To prevent any further spread of this illness, the crew would be demobed.

Shortly after, another 20-person crew showed up at the Spike Camp’s Medical Unit exhibiting the same symptoms. They were also instructed to go to the hospital for further evaluation and treatment and were demobed.

“Doc in the Box” Determined to be the Best Strategy

The Medical Unit Leader, Dan Neary, and Trainee, Tim Goforth, left Spike Camp and traveled to a known cell phone reception location where they contacted the Safety Officer to inform him that two 20-person crews appear to have Strep Throat and had been sent to the hospital.

After contacting the Safety Officer, the Medical Unit Leader and Trainee contacted the Incident Commander to inform him of the situation and to discuss a strategy.

The Trainee told the Incident Commander that while it appears to be Strep Throat, they needed to know exactly what they were dealing with to be able to proceed with the correct method of treatment.

A “Doc in a Box” (informal term for a physician who provides primary health care at a temporary onsite care clinic) strategy was discussed and determined to be the best course of treatment for all personnel at Spike Camp. That way, the potential for the infection to be spread around the nearby city of Safford as well as overwhelming the local hospital would be prevented.

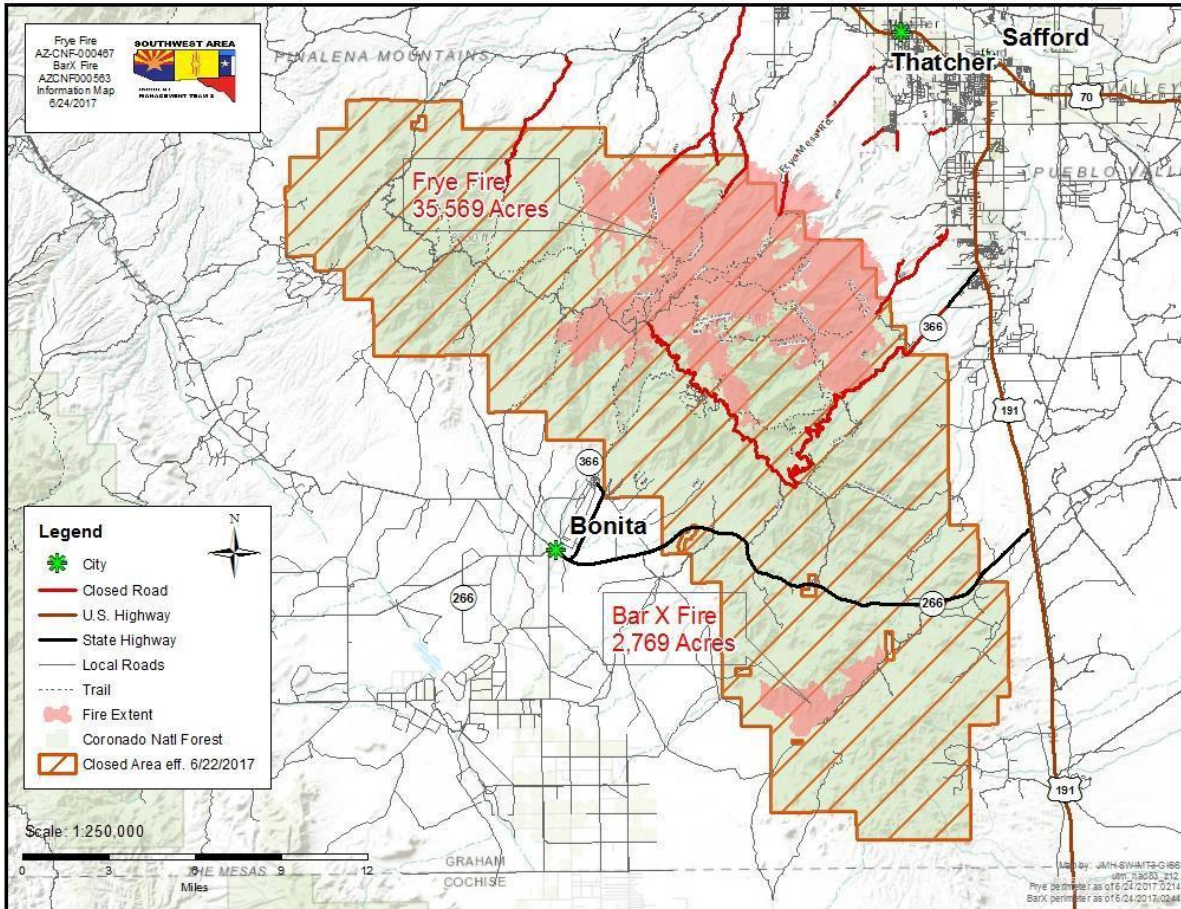
It was determined that all individuals who were infected would be isolated away from the other personnel at Spike Camp. Furthermore, no more crews would be sent away from Spike Camp “down the mountain” until the Gila/Las Cruces Type 3 IMT knew absolutely what they were dealing with. It was also decided to dump all water cubies (containers) and catered food, and to not allow any new inbound crews into Spike Camp.

The medical personnel broke into teams of two and proceeded to wipe down everything in Spike Camp with Clorox disinfecting wipes.

Two More Crews Exhibit Strep Symptoms

After the Medical Unit Leader and Trainee returned to Spike Camp, yet another 20-person crew and an engine crew had showed up at the Spike Camp’s Medical Unit exhibiting the same symptoms as the previous two crews.

These two crews were told to stay in Spike Camp. They were informed that the Type 3 IMT was working on a solution. In the meantime, the Spike Camp’s medical personnel were providing these people with what aid and comfort they could.



Aggressive—Successful—Approach

The Gila/Las Cruces Type 3 IMT undertook a progressive approach. Due to the aggressiveness of this Strep Throat outbreak and the possibility that nearly 300 people had been exposed, the Type 3 IMT recommended that no more crews or persons should leave the Spike Camp at the top of Mt. Graham, thus lessening exposure to even more people. The Type 3 IMT also attempted to isolate those persons complaining of symptoms. In addition, aggressive sanitary practices were initiated at the Spike Camp to try to halt the spread of Strep.

Strep can be spread directly (person to person) and indirectly through food and water. Therefore, the Type 3 IMT also had water sources tested multiple times. At morning briefings at Spike Camp, the Medical Unit Leader informed all personnel to: 1) wipe down all their gear, equipment, and vehicles with Clorox disinfecting wipes or use hand sanitizer and a towel; 2) wash hands frequently and to apply hand sanitizer often; and 3) avoid personal contact whenever possible.

These precautions proved to be successful in helping to stop the spread of the Strep Throat outbreak on the Frye Fire. After Friday, June 16, only one new individual tested positive for Strep Throat—joining the 62 other individuals who were diagnosed with and treated for this illness.

Strep Throat Spread Prevention Measures Implemented

Next, the Medical Unit Leader and Trainee gathered all medical personnel into the Medical Unit to discuss the situation and determine an optimum course of action. It was decided to take preventative measures to aid in stopping the spread of this illness throughout Spike Camp.

The medical personnel broke into teams of two and proceeded to wipe down everything in Spike Camp with Clorox disinfecting wipes.

The Medical Unit Trainee met with the Base Camp Manager to ensure that all cubies were dumped and that all water spigots were flagged for “No Use.” The Medical Unit Leader Trainee also met with the Shower Unit personnel to inform them of the situation and asked them to thoroughly clean all of their equipment. He also asked them what type of cleaner they used to clean the showers and wash sinks. They informed that they use a hospital-grade cleaner and sanitizer. The Shower Unit personnel were kind enough to provide the Medical Unit with this product to assist in their spread-prevention efforts.

The Medical Unit Leader and Trainee then made another trip back to the known cell phone reception location to make contact with the Incident Commander to inform him of these other crews who came to the Medical Unit exhibiting the same symptoms as the previous crews.

The Incident Commander informed the Medical Unit Leader and Trainee that the illness was indeed Strep Throat. When the 20-person crew was seen at the Mt. Graham Regional Medical Center, one of its crewmembers was diagnosed with the bacterial infection *Streptococcus Pharyngitis* (Strep Throat). The engine crew, who had been seen at a private doctor’s office in Safford, had also tested positive for Strep Throat. (They were assigned to a motel for their 48-hour antibiotic treatment period.)

The Type 3 IC said he was working with a local medical doctor in Safford, Dr. Trent Batty with Mt. Graham Family Medicine, to travel up to Spike Camp to evaluate and treat all personnel there. Later, when Dr. Batty arrived at Spike Camp, he met with all medical personnel and—assisted by the Medical Unit personnel—began testing and treating all camp personnel.

Ensuring those Infected are Treated—and Preventing Further Strep Throat Spread

Once all the testing and treatment was done for the evening, the Medical Unit Leader and Dr. Batty had compiled a list of the tested and treated individuals to track. This was key in making sure that those people who were infected with Strep Throat would receive the rest of their treatment to cure them of the infection and to stop any further spread.

In addition, those people who had been treated with antibiotics were to report to the Medical Unit every day until their 48-hour period of isolation/decontamination treatment was completed.

The Type 3 IMT's swift and effective contracting of Dr. Trent Batty on Friday, June 16—as well as contracting with Registered Nurse Elizabeth Drew and two Paramedics the next day—could not have happened without the help and horsepower of the Southwest IMT Team 2 Deputy Incident Commander Rich Nieto and staff. The Type 3 IMT's Incident Commander Ricky Cox was engaged in many phone calls and conferences with Nieto to coordinate the onsite medical response on June 16.

34 Individuals Test Positive for Strep Throat

Dr. Batty took Rapid Strep Swab Kits and antibiotics up to the Spike Camp. (Using the Rapid Strep Swab Kits, the throat and tonsils are swabbed to collect bacteria from the infected area for testing.) Dr. Batty initially swabbed more than 80 firefighters. That first night, he diagnosed 34 individuals as testing positive for Strep Throat and immediately began treating them with the antibiotic Azithromycin.

Dr. Batty spent the night at Spike Camp to be able to take care of as many persons as possible with the supplies he had brought with him. He had to return to town to get more antibiotics and strep kits and returned to Spike Camp on Saturday night to continue caring for the firefighters. That night, one more firefighter was diagnosed with Strep Throat, for a total of 35 individuals with the infection, not including those who had demobed. (Keep in mind the 12-to-36-hour pre-symptom incubation period.)

When Dr. Batty departed the Spike Camp on Saturday, he left the Spike Camp Medics there with strep kits and antibiotics as well as instructions/directions.

“Incident Health Group” Created

This medical Incident-Within-an-Incident occurred as the Gila/Las Cruces Type 3 IMT was preparing a transition with the Type 2 Southwest IMT Team 3. As information became available regarding the Strep Throat outbreak, the two IMT Incident Commanders discussed options and potential action plans.

As the Type 2 Southwest IMT Team 3 prepared to take over the Frye Fire, it was decided to create an “Incident Health Group”—to be completely separate from the operations-focused Medical Unit operations—to concentrate solely on the Strep Throat incident.

First 24-36 Hours of Strep Outbreak's Discovery had Competing Issues to be Addressed

Ironically, during this disease outbreak's first 24-36 hours of discovery—when it was unclear why and how so many firefighters at the remote Spike Camp up on Mt. Graham (more than a two-hour drive from the ICP in Safford) were becoming ill, two other key factors were also occurring:

- ✓ The fire was transitioning from the Type 3 IMT to the Type 2 IMT.
- ✓ The fire was exhibiting challenging growth and suppression complexity.

Both the outgoing and incoming Incident Commanders were in constant contact. They attempted to make the best, educated safety-conscious decisions concerning caring for the sick firefighters while also fighting a very complex, growing fire.

The fact that radio and cell phone communications were problematic in the area where the Spike Camp was located helped to compound the initial perceived chaos surrounding this unfolding medical event.

Maintaining communications between camps (ICP and spikes) during crisis events was a key point brought forward in Section 3 “Recommendations.”

Directives were given to ensure that:

- ❖ This bacterial infection outbreak was contained;
- ❖ Firefighters were treated and isolated as necessary to minimize/stop the Strep Throat spread;
- ❖ Immediate contact be initiated with the Graham County Health Department and subsequently the State Health Department and whomever else was needed to investigate the outbreak.

Darrin Webb, one of the incident's Medical Unit Leaders on the Type 2 Southwest IMT Team 3, was put in place as the "Group Supervisor" in conjunction with the team's Planning Section Chief, Troy Lutrick to help with coordination and documentation of this Strep Throat incident response. Both longtime Paramedics, these two were to report directly to the Type 2 Southwest IMT Team 3 Incident Commander, Alan Sinclair. Medical Unit Leader Webb also briefed the crews each day at every briefing regarding Strep Throat preventative measures and any necessary protocols. He also provided daily information, issues, and updates to the IMT on the Strep Throat outbreak in coordination with Graham County epidemiologists.

Doctors Ordered

On Sunday, the first "Doc in a Box" arrived, which had been ordered by the Type 3 IMT to assist with the management of the Strep Throat outbreak. The plan was to insert the medical doctor at the Columbine Spike Camp up on Mt. Graham and supplement Dr. Trent Batty's efforts from the previous two days.

Later, a second "Doc in a Box" was ordered (to arrive on Tuesday) in the event the Incident Command Post started having Strep Throat outbreak issues.

Dr. Trent Batty, who had arrived at the Columbine Spike Camp on Friday and departed on Saturday, remained in close contact with the Frye Fire overhead in the event that his assistance might be further required prior to the arrival of these requested doctors/medical trailers.

When the incident-ordered doctor arrived on scene on Sunday, Dr. Batty met and briefed with this doctor to exchange information concerning this unusual medical incident. It is important to note that frequent discussions were occurring and the Agency Administrators to the fire were exceptionally supportive of this plan.

The aggressiveness of this particular outbreak—and with nearly 300 firefighters potentially exposed—was considered a risk to the local communities. Therefore, important measures were taken to also limit the public's exposure to the illness.

Protocols and Procedures

Protocols and procedures were developed, put into place, and recommended at all briefings. They included: less interpersonal contact (less hand shaking), being vigilant in the use of hand washing and the hand sanitizer, and to be on the lookout for any new Strep Throat cases that might appear.

In consulting with the doctors and the County Health Department, it was decided that people who tested positive for Strep Throat would be placed in an initial isolation of 24 hours (the time for the antibiotics to render the bacteria to a non-contagious state), plus an additional 24 hours for rehabilitation to be sure any other symptoms could be remedied.

This total 48-hour period of isolation/decontamination would ensure that the person would be monitored for a sufficient amount of time before being released for work or being demobilized back into the community. The aggressiveness of this particular outbreak—and with nearly 300 firefighters potentially exposed—was considered a risk to the local communities. Therefore, important measures were taken to also limit the public's exposure to the illness.

T I M E L I N E

The following “Timeline” information—from Sunday June 18 through Thursday June 22—is provided from the Type 2 Southwest IMT 3’s Medical Unit Leader Darrin Webb’s notes and perspectives.

Sunday June 18

1045 Hours

Opened an isolation/decontamination room and an adjoining rehab room following decontamination for the person to stay in until they are no longer contagious (using two classrooms with their own isolated restrooms).

1100 Hours

Contact was made with the Graham County Public Health Registered Nurse, Melissa Lunt, and County Health Director, Brian Douglas. Nurse Lunt, in turn, contacted the county’s Epidemiologist, Dr. Matt Bolinger. A meeting was set up for Monday morning to discuss their assistance and capabilities to help with this medical incident. Nurse Lunt also agreed to call the State Health Department first thing tomorrow (Monday) in the morning.

1305 Hours

Dan Neary, the Spike Camp Medical Unit Leader, called in to report that they had done approximately 140 Strep Throat tests over the last three days—with a 40 percent infectious rate. Neary said there were approximately 150-200 persons still in Spike Camp. This did not include the two crews and engine crew which had already come down from the Spike Camp and demobed.

1540 Hours

Dr. Batty had recommended the use of probiotics in conjunction with the antibiotics to stem many of the common side effects of the antibiotics. Probiotics were therefore ordered. Next, Pat Dearing, Incident Business Advisor, called to inquire why the probiotics had been ordered—and informed that they had been rejected. After a discussion regarding the importance of probiotics, Dearing requested a justification from Dr. Batty. Dearing said she would make the request again. After a justification was received from Dr. Batty, the requested order for probiotics was approved.

1700 Hours

Medical Unit Leader Darrin Webb, in following-up via phone with the two crewmembers who had been placed in a motel room after being seen and treated at the Mt. Graham Regional Medical Center, discovered that they were not on antibiotics and had not been swabbed for Strep Throat. They had been diagnosed with “Acute Pharyngitis.” Webb then ensured that they were both swabbed. This test revealed that both crewmembers were “positive” for having Strep Throat. They were started on antibiotics, were to remain in their motel room, and had their “48-hour clock” reset.

1800 Hours

Dr. John V. Gallagher and Registered Nurse Elizabeth Drew of the first “Doc-in-a-Box” drove up to Spike Camp to check on the crews, conduct any necessary testing, and distribute additional meds as needed. They recorded one positive test then returned to the Incident Command Post. Dr. Gallagher and Nurse Drew also stopped and talked with the incident’s catering crew at the second midpoint Spike Camp at Treasure Park to ensure that there were no issues with any of these people.

Monday June 19

0700 Hours

The American Fire Services Mobile Medical trailer “Doc in the Box” was sent up to Spike Camp and stationed at Treasure Park. (Yesterday, they had been held back at the Incident Command Post due to the erratic fire behavior and unpredictability.) This is Dr. Gallagher’s unit.

0800 Hours

The Type 2 Southwest IMT Team 3 Safety Officer Duane Chapman received a call from Will Briggs from the Southwest Region’s Risk Management Office. Medical Unit Leader Darrin Webb was nearby. They talked with Briggs concerning the rumors and blogs that were circulating about the Frye Fire’s Strep Throat outbreak. Briggs requested that a conference call be held today to develop a press release that would share the most up-to-date/accurate information on this medical incident.

1020 Hours

In the conference call with the Agency Administrators, it was revealed that five or six members of the original 20-person crew who had gone to the Scottsdale Hospital on Friday or Saturday had been diagnosed with Strep Throat. In addition, one person from the 20-person crew who had initially gone to the Mt. Graham Regional Medical Center also tested positive for Strep Throat on Saturday.

1040 Hours

A face-to-face meeting was held with the Graham County Health Department’s Melissa Lunt, RN, and Dr. Matt Bolinger. It was decided that these two would go up to Spike Camp to survey all of the firefighters who had been diagnosed/treated to gain more information that was currently unavailable. Two major requests/recommendations that surfaced during these conversations with the Health Department were to be sure that no water cubies were being reused and to examine the meal menus from the days leading up to the Strep Throat outbreak.

1230 Hours

A firefighter was sent down from Spike Camp who has been treated for three days with antibiotics, but is still “feeling pretty crummy” with several symptoms. Dr. Gallagher changed this person’s antibiotics to Amoxicillin and sent him down to be placed in a motel.

1330 Hours

A conference call to discuss the Strep Throat outbreak was held with the following people: Will Briggs from the Southwest Region’s Risk Management Office; IMT Safety Officer Duane Chapman; Incident Commander Alan Sinclair; Incident Commander Trainee Dave Gesser; Planning Section Chief Troy Lutrick; Public Information Officer Sharma Chavez; and Liaison Officer Benny Fisher. It was determined that following this call, updated information regarding this medical incident will be assembled into a press release to be posted and distributed in the next hour or two.

1530 Hours

Three Graham County Health Department employees (Melissa Lunt, RN, Dr. Matt Bolinger, and Dr. Brian Douglas)—after being equipped with the proper PPE—were escorted by Medical Unit Leader Darrin Webb up to Spike Camp to meet with the firefighters at dinner time. They were able to collect surveys by talking with each of the individuals still located at this Spike Camp.

Medical Unit Leader Webb conducted the survey with the five individuals who were no longer at Spike Camp. In addition, Registered Nurse Lunt performed follow-up calls to the crews who were no longer on the fire.

Due to these outreach efforts, surveys were made with every one of the individuals still located on the fire. The caterer at the Spike Camp was also given a quick inspection by the Health Department, which had a good outcome.

Tuesday June 20

1000 Hours

Medical Unit Leader Webb and Graham County Public Health Nurse Melissa Lunt followed-up with the two hand crew members staying in a motel. They are doing better, their symptoms are mostly gone. Webb and Lunt will follow-up with them again one last time tomorrow morning. If all is well, they will be released to return to work tomorrow morning.

1030 Hours

Medical Unit Leader Webb and Nurse Lunt followed-up with the engine crew member in the motel. He is still feeling poorly with sore throat, fatigue, headache, and fever. Dr. Batty has an appointment to see him at 1400 today.

1230 Hours

Nurse Lunt visited the ICP with the County Health Department's surveys on the ability to get information for patients from the hospital and doctors' offices. She was working on an official updated list of names/numbers of individuals who have tested positive for Strep Throat. The official numbers were still fluctuating drastically.

1400 Hours

The engine crew member was seen by Dr. Batty. The doctor states that he is looking a lot better than when he saw him Saturday. If the engine crew member can go another 24 hours without any antipyretics (an agent that reduces fever) for the fever, he can return to work. He was helped getting a motel room for another day.

1510 Hours

Medical Unit Leader Webb went by the Graham County Health Department, dropped off information that Nurse Lunt had requested, and reviewed the "information release" that they are putting out to the local health providers.

1900 Hours

Graham County Health Department Epidemiologist Dr. Matt Bolinger visited the ICP and said they feel confident they can put the end of the "contamination period" at Tuesday, June 13. This is based on the fact that Strep Throat's incubation period is from 2-5 days, with the most common information from the Centers for Disease Control and Prevention (CDC) stating 3 days. The vast majority of the Frye Fire firefighters were assigned to Division A. They became sick and were demobilized on Friday June 16. The first three crews who exhibited the Strep Throat symptoms all arrived on the fire on June 10. The engine crew that developed the Strep Throat symptoms arrived on the fire on June 11.

Wednesday June 21

1000 Hours

Medical Unit Leader Webb begins reading through and examining medical logs from the Gila/Las Cruces Type 3 IMT, including the notes of events and evaluations, etc., from Spike Camp. In doing so, he discovers information that Melissa Lunt, RN, and Dr. Matt Bolinger with the Graham County Health Department will find useful about a few possible new patients. He also found the information relating to the food menus that Nurse Lunt and Dr. Bolinger had wanted. (He has the vendor names but not the actual menus.)

1200 Hours

Medical Unit Leader Webb followed-up with the engine crew member who had been staying in the motel. He has had no fever since seeing Dr. Batty yesterday. He has already been checked out of the motel (check-out time was 1100). Arrangements are being made with Ground Support to get him back to his crew on Division A.

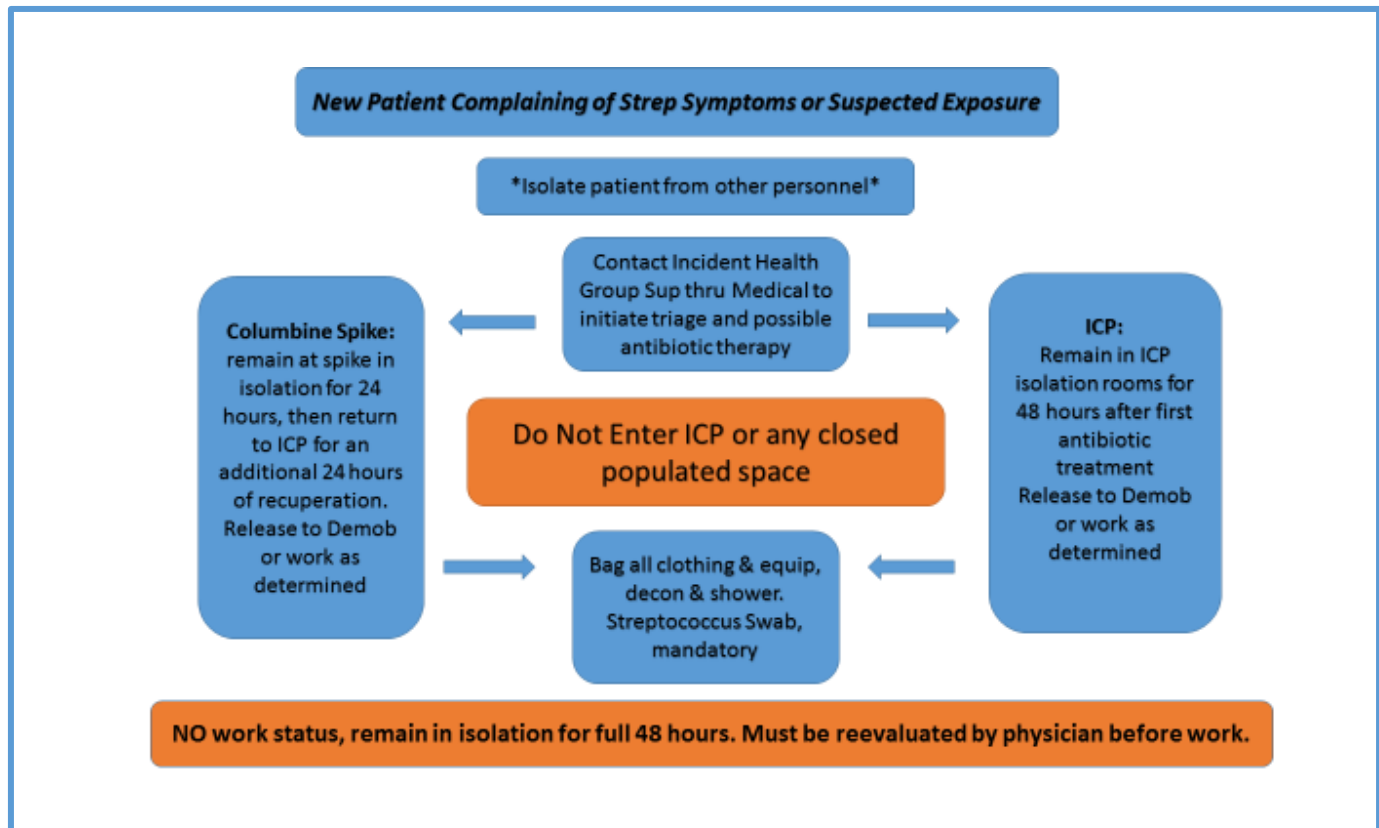
1400 Hours

The Southwest Coordination Center's Crew Desk was contacted to determine where the three crews were prior to coming to the Frye Fire, as requested by Nurse Lunt.

1440 Hours

Nurse Lunt informs that she has finally heard back from the crews who left the Frye Fire on Saturday. Therefore, her surveys and follow-ups are now complete.

Patient Strep Throat Processing Flow Chart on the Frye Fire



Thursday June 22

1430 Hours

Graham County Health Department Nurse Melissa Lunt's finalized updated list provides a comprehensive inventory of all persons on the Frye Fire who were diagnosed "positive" with Strep Throat and treated. This list includes the crews who had left the Frye Fire prior to the Type 2 Southwest IMT 3's arrival on Saturday. There were a total of 63 confirmed cases of Strep Throat.

Nurse Lunt also stated that the Centers for Disease Control and Prevention (CDC) had contacted them at the Health Department and requested cultures if any were done and if any new cases appear. She will provide culture kits if new outbreaks occur. (Unfortunately, no cultures were collected.)

“The Frye Fire on Friday, June 16, was rapidly escalating in complexity and was lining up to possibly make a substantial run over the next two days. This, and an Incident-Within-an-Incident that led to the loss (removal) of more than 60 firefighters in one shift was definitely a very stressful situation that overall was handled with a high degree of professionalism.”

**Heath Barker
Division Group Supervisor
Gila/Las Cruces Type 3 Incident Management Team**

2. Conclusion

At this point in time, unless any new cases appear, it is believed that the Frye Fire’s Strep Throat investigation is complete. This incident concluded with a total of 63 known and treated patients who were confirmed to have Strep Throat.

From information and comments made by several people during the surveys, it is believed that the Strep bacteria might have come from someone on a particular hand crew who arrived at the fire on June 10. However, there is no way to actually confirm this.

It’s hard to track down someone who may simply have been a carrier and was not experiencing the adverse symptoms associated with this disease. And yet this person might have transmitted the bacteria to others who already had a depressed immune system because of the environment in which wildland firefighters work. This environment includes: heat, smoke, and dust in which dehydration, fatigue, exhaustion and respiratory compromise is prevalent.

Generally speaking, Strep is not known to cause an outbreak such as this.

When you add these factors together with an aggressive bacterium like Streptococcus, it is surprising that this type of outbreak doesn’t occur on a more regular basis. Or, maybe it does and we are not catching it like we should and getting lucky that it’s not as widespread as this outbreak was?

Generally speaking, Strep is not known to cause an outbreak such as this. All we can guess is that this more widespread outbreak was due to the above noted factors and having a large group of people—interacting closely as firefighters do—which precipitated a rapid spread. Without a culture, which we will probably never attain from this incident, we will not be able to determine if it was a variant strain of Streptococcus bacteria.

We have learned a great many things from this medical incident, both good as well as where improvement is needed—for both the wildland firefighting community and the county health department.

3. Recommendations

- ❖ Stress proper handwashing, especially before meals.
 - ❖ Look into the ability to clean portable toilets better/more often.
 - ❖ Make sure food servers properly wash-up. Prevent coughing/sneezing persons from serving food.
 - ❖ Maintain communications between camps (ICP and spikes) during crisis events.
 - ❖ In the event of an unknown illness or suspected outbreak—anything with multiple persons involved—do not hesitate to contact the County Health Department for assistance with identifying, treating, and containing an illness.
 - ❖ Ensure thorough and effective communication is maintained with the County Health Department personnel—by the Medical Unit Leader at minimum—when they arrive on an incident. For instance, providing the contact names and numbers of the local health professionals could help greatly if/when such a medical disease outbreak occurs.
 - ❖ The County Health Department personnel should make themselves known to the Incident Management Team when they come to the fire. They should also make their capabilities known, in case they are needed. This should be coordinated at the Command Staff level.
 - ❖ In case of a suspected contagious disease outbreak, the County Health Department personnel should establish procedures to have quicker and more efficient communication with local medical providers. Initially, this can be coordinated at the Command Staff level.
-

4. What was Done Right

- ❖ Because there were so many ill—and potentially ill—people associated with this medical incident, keeping them in Spike Camp and isolating them from non-ill persons helped prevent the continued transmission and spread of the illness. With a 40 percent infection rate, the total number of sick firefighters could have been in the hundreds.
- ❖ Keeping the crews in Spike Camp and eventually at the Incident Command Post and getting a doctor to them versus bringing all those ill persons down into town, helped isolate and stop the spread of the illness. (It also saved significant money by not having every person evaluated and treated in a clinic or hospital.)
- ❖ The Incident Commander and Command Staff's actions to establish an Incident Health Group to isolate the problem and not interfere with the firefighting operations and regular medical operations helped to maintain good consistent communications with the County Health Department.
- ❖ Having a "Liaison" (Incident Health Group Supervisor) to work with the County Health Department was invaluable from the Health Department's point of view.
- ❖ Allowing the County Health Department personnel to visit and facilitate the surveying with the ill/treated firefighters—even though they were still on the fire lines (in Spike Camp)—was vital to the Health Department's and IMTs' investigation.
- ❖ Having a Doctor and Registered Nurse available to facilitate testing and treatment at Spike Camp for the potential continuation of the illness was very important.