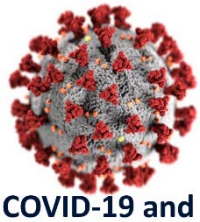
Rapid Lesson Sharing

**Event Type**: COVID-19 Observations and Suggestions

**Location:** Sawtooth Fire
Tonto National Forest
Arizona



**COVID-19 and Fire Season 2020 Lessons**

**For the latest on COVID-19 visit CDC.gov/COVID19**

# My COVID-19 Observations from the Sawtooth Fire

***"Since the emergence of COVID-19 there has been an attempt to provide guidance on how to deal with the impacts of this pandemic. This guidance has been overwhelming in volume, differs by agency, and includes significant ambiguity. The requirements are unrealistic for the incident environment and the transient nature of our workforce."***

***"If we are going to take meaningful actions to minimize the spread of COVID-19 on incidents we need to recognize the difficulty associated with changing long-held practices at this level and focus our efforts on the cultural changes that must occur. This is a heavy lift and it cannot just be another addendum to a document, it needs to be the primary effort."***

***"I recognize that significant time and effort have been put into these efforts and I am in no way criticizing what was intended. However, at the end of the day we should be asking ourselves if what we are doing is effective or ineffective and recognize that if we are not effective, the best solution may be to eliminate guidance and processes that are ineffective regardless of the sunk costs."***

**By Jayson Coil**

*[Jayson Coil is the Assistant Chief of the Sedona Fire District in Sedona, Arizona, where he has been a Chief Officer for 15 years and a Paramedic for 21 years. In addition, Jayson serves as Operations Section Chief 1 (OSC1) on the Southwest Area Incident Management Team 1, and has been on IMTs since 2000. Jayson holds a Masters in Leadership and is currently pursuing a PhD. in Performance Psychology. In early June his Southwest Area IMT 1 was assigned to the Sawtooth Fire on Arizona's Tonto National Forest.]*

It is my belief that at the end of the day we need to ask ourselves if the action we are undertaking is effective or ineffective. It matters little if the intent is viewed as useful if the underlying actions do not allow for effective implementation.

Based on this belief I have some observations and suggestions on the topics outlined below. It is my hope that they will, in some way, help us be more effective.

## 1. Acknowledgement of the Limitation of Evidence

With mask wearing specifically, and to create a broader understanding of the need for adaptability when it comes to mitigations, we should openly acknowledge that the evidence base on the efficacy and acceptability of the different types of face mask in preventing respiratory infections during epidemics is sparse and contested.

## Contents



This is a novel virus and we are learning as we go. But COVID-19 is a serious illness that currently has no known treatment or vaccine and is spreading in an immune naive population. Deaths are rising steeply and health systems are under strain. Outbreaks will impact our ability to perform our mission in many ways.

The ethical question for policy makers is: *Should we apply precautionary principles now and set clear and enforceable expectations on the grounds that we have little to lose and potentially something significant to gain from these efforts?*

***"In my experience, both on this Sawtooth Fire incident and at home, I have had success in acknowledging the uncertainty and refocusing on the desire to provide for the safety of our workforce. It is also essential that we remember that when we add complexity when trying to change a culture we confuse the issue and the most essential actions are no longer the focus."***

**Leadership Should Take This Seriously**

Adherence only requires self-discipline, a small amount of discomfort, and a collective willingness to enforce the standard. Leadership should take this seriously, be data informed and evidence driven to do everything we can to not only have people feel, but see, that we are taking their health seriously.

This is a behavior issue that will require adaptation of members of different agencies, political positions, risk tolerance, and beliefs. The adoption of mitigation will lead to cognitive dissonance for some and how they reconcile this will vary widely. In some cases, these mitigations represent a tangible reminder of the potential of an outcome that has caused them great stress and, as a result, they have chosen to ignore.

Some will look for ways to discredit our actions and exhibit bias in how they view the credibility of different sources. We should be prepared for this and how we will react.

In my experience, both on this Sawtooth Fire incident and at home, I have had success in acknowledging the uncertainty and refocusing on the desire to provide for the safety of our workforce. It is also essential that we remember that when we add complexity when trying to change a culture we confuse the issue and the most essential actions are no longer the focus.

At the conclusion of this RLS I provide more detail on why I feel this way and why this complexity has the very real potential of negatively impacting firefighter safety and IMT success.

## 2. A Need for Consistency and to Simply Apply Mitigations

The need to simplify and standardize the expectations for COVID-19 mitigations on incidents is the biggest single issue we must address. This guidance needs to clear and concise, able to be implemented, and it must be communicated clearly and consistently.

1. Maintain the integrity of your "Module as One" at your home unit, while traveling and at the incident.
2. Maintain physical distancing of at least six feet with those outside of your Module as One whenever possible.
3. When distancing is not possible, or when in groups greater then 10, wear a mask or cloth face covering.
4. Use hand sanitizer or wash your hands frequently, especially after contact with high-touch surfaces such as door knobs or fuel pumps.
5. Conduct daily self-assessments and temperature checks and isolate immediately and report to medical if you show the symptoms of COVID-19.

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**Guidance – A Start Toward Consistency**

***"Everyone on this incident, regardless of position, has the right to a safe work environment and is empowered to direct a person to back up if they get within six feet."***

This quotation should be included in the guidance as some individuals may find it difficult to ask someone else to step back, especially if there is a significant perceived power distance between the two.

This guidance should be in every delegation, IAP, and on signs around the incident. Agencies should also ensure that everyone responding clearly understands these requirements and that they are enforceable and consistent.

We have since distilled this down into the following statement in our IAP. Our sister IMT, the Southwest Area Incident Management Team 2 (Pierson, IC), has also agreed to align with this statement in their IAP on the Big Horn Fire on Arizona's Coronado National Forest.

**From the June 8, 2020 IAP under "Incident Requirements":**
**"Resources will maintain 'Module as One' separation. Masks will be required in meetings and briefings, and when interacting in close proximity (less than 6 feet) with individuals outside your 'Module as One.'"**

This may not be the perfect wording and I am aware that new information has suggested that six feet may not be enough. But this represents a start toward consistency.

### 3. The Case for Masks

**Wearing face masks at briefings on the Sawtooth Fire.**

The benefit of cloth face coverings and surgical masks as both source protection and personal protection needs to be made and consistently enforced. I have had success in relating the issue to seatbelts and our fire shelter. If these masks are 68% effective as the literature suggests then we need to acknowledge that they are not 100% effective and relate this to other safety standards we currently require. Your seatbelt will not save you in 100% of automobile accidents and your shelter is probably far less effective than masks in protecting you from injury or death in a burnover.

### 4. Public Health SME Engagement is Essential

All personnel engaged in medical support on an incident should have a relationship with public health. Fire leadership should identify alternative sources for expert consultation. This is especially true if—as is the case in some parts of Arizona—there is an unwillingness to assist.

In my experience on the Sawtooth Fire there was no established mechanism to get support. What's more, the State of Arizona Department of Health Services plainly stated (and documented in an email) that they would not assist.

***"Knowing that these different issues will occur and how to navigate them to get guidance is critical."***

On the other hand, in Pima County when my counterpart reached out to their health department they willingly engaged, offered support, and are planning on attending the cooperator meetings. Knowing that these different issues will occur and how to navigate them to get guidance is critical.

**Hierarchy: County<State<CDC**

This hierarchy represents jurisdictional authority. Generally, the IMT would want to link with the county upon arrival. Ideally, local units have established this relationship before the fire happens. Many health departments train in ICS and may be able to send a representative to assist with your IMT.

Primary specialists you will find in a health department:

- Epidemiologists: Disease detectives, often physicians, veterinarians, or other scientists.
- Public Health Nurse: Clinical nurses who specialize in public health.
- Environmental Health Specialists: Trained in aspects of public health and the human environment (health inspectors).

***"Many health departments train in ICS and may be able to send a representative to assist with your IMT."***

Depending on the county's size and funding you may encounter any of these personnel as your primary contact with the health department. An epidemiologist would always be the first choice in an infectious disease scenario but the department may not have one on staff. The other personnel are well versed in disease control. The county health department will generally make the call to the state or to the Centers for Disease Control and Prevention

(CDC) when they need additional assistance. The CDC's Epidemiologic Intelligence Service assigns federally employed epidemiologists at state and some large county health departments. If you have an outbreak, the county may request their assistance.

### 5. We Need a Basic Understanding of Epidemiology

Everyone that is expected to provide medical support and guidance on incidents and leadership determinations about courses of action need to recognize our limitation and when to seek expert consultation.

One way we do better at gaining this recognition is to develop some basic knowledge in the field. The online training available through the free public health training platform: http://phlearnlink.nwcphp.org/.

All medical unit leadership should complete training on "contact tracing" and how to interpret epidemiological statistics. Doing so will align their actions with county health and enable the appropriate immediate actions to stabilize an event, identify cases, and understand appropriate contact tracing actions.

To visit the free public health training platform: http://phlearnlink.nwcphp.org/. The primary courses listed below can be found under "Online Courses/Epidemiology." I recommend and have completed the following courses:

- Data Interpretation for Public Health Professionals
- Every Contact Counts: Contact Tracing for Public Health Professionals
- Basic Infectious Disease Concepts in Epidemiology
- Introduction to Outbreak Investigation
- Measuring Risk in Epidemiology
- What is Epidemiology?

It only took about 8 hours. A certificate is provided for each course.

### 6. Issues Related to the Accuracy of PCR Testing Must Be Understood

Publishing their results in the *Annals of Internal Medicine*, the researchers stress the need for caution in interpreting any negative results of RT-PCR (Real Time Polymerise Chain Reaction) diagnostic tests. They explain that many other factors, such as the timing of the test, appear to play a role in the accuracy of the results. The probability of a false negative COVID-19 test decreased from 100% on Day 1 of the infection to 67% on Day 4. This further decreased to 20% on Day 8, three days after a patient would first start to experience COVID-19 symptoms.

Day 8 appeared to be the optimal time for testing. After this, the probability of a false negative once again began to increase. A 21% probability on Day 9 increased to 66% if testing occurred on Day 21 of infection.

I am aware of the Fire Management Board (FMB) "Guidance on Laboratory Testing for COVID-19" (April 28, 2020). However, this is not well understood by the majority of the IMT members I have interacted with. I believe this issue needs to be more aggressively communicated with the fire community and that the PCR testing requires us to commit to the isolation criteria and not use a PCR test—especially shortly after exposure—as the rational for returning someone to duty.

**Bucket drop on the Sawtooth Fire on June 1.**
**Photo courtesy InciWeb.**

## 7. Observations on How Issues in One Area Impact Compliance in Others

I am certain that you all know this, our workforce is not stupid.

In fact, they are very smart and their diverse backgrounds and experiences are both valuable and a reason for caution. It is important to recognize that when all these different actions are being carried out under the umbrella of COVID, illogical approaches to one issue can and will be generalized to the broader effort. I see two scenarios being played out that have the potential to negatively impact other efforts.

"Aggressive Initial Attack" – It has been stated that we will now be more aggressive on initial attack and utilize aircraft to a greater extent. If we are going to put the fire out and the aircraft is effective we use it; if it is not effective we stop using it. This statement sets the precondition for responders to bias their actions toward more aircraft use when they have no other currently available options and they feel they need to be "doing something".

***"We should recognize that, in my opinion, the emphasis on 'aggressive initial attack' potentially creates the needed nudge to increase the transference of risk and reduces the willingness to give up on failed efforts."***

This propensity already exists and we have to fight against it. It is often heard when looking back at a fire that escaped initial attack that the conversation centers around *"if we only had one more…"* You can fill in that sentence with: load of retardant, crew, helicopter, etc. We should recognize that, in my opinion, the emphasis on "aggressive initial attack" potentially creates the needed nudge to increase the transference of risk and reduces the willingness to give up on failed efforts.

Please consider this:

> ***"There is a tendency for the chain of command to overload junior officers with excessive requirements in the way of training and reports. You will alleviate this burden by eliminating non-essential demands."*** – George S. Patton, Letter of Instruction No. 2, April 3, 1944.

If you replaced "training and reports" with "agency specific guidance and policy documents" you would accurately describe the current situation surrounding COVID-19. The guidance starts with CDC and FMB and then layers are added that include policy and new guidance that is often conflicting or too ambiguous to be equally applied.

Then you have overlap and interpretation and different documents are updated at different times. This includes best management practice that is only "best" because it is the first set of guidance and there is nothing to measure it against (which I guess also makes it "worst" management practice).

**The Sawtooth Fire on May 31. Photo courtesy InciWeb.**

Next, you add decision trees that require a certain level of expertise and understanding to execute. These attempts at simplification create a false sense of confidence in decision quality. This confidence then leads to false expectations about the accuracy of the decision and a failure to recognize weak signals and how the disruption in team process and the time needed to filter and interpret information impact overall performance.

I recognize that significant time and effort have been put into these efforts and I am in no way criticizing what was intended. However, at the end of the day we should be asking ourselves if what we are doing is effective or ineffective and recognize that if we are not effective, the best solution may be to eliminate guidance and processes that are ineffective regardless of the sunk costs.

## 8. The Impacts of New Knowledge and Added Complexity on Team Performance

Effective incident management requires a coordinated effort and high-level performance within a dynamic environment. Novel problems such as COVID-19 demand conscious application of instructions and new knowledge.

This effortful process limits available attention and reduces productivity in other areas. The scope of processes and actions is necessarily narrowed to accommodate for the added workload required to address complex and conflicting documents.

The application of well-constructed rules when adequate knowledge is present is less effortful and allows the automation of some processes. This frees up cognitive ability and allows for more complex processes to be completed and errors to be reduced. The gap between these two conditions can only be bridged when knowledge can be contextualized. Then, rules based on relevant experience, training, and knowledge can be created.

***"Effective incident management requires a coordinated effort and high-level performance within a dynamic environment. Novel problems such as COVID-19 demand conscious application of instructions and new knowledge."***

If we combine enough practice with a willingness to adapt performance to the results we realize then we are able to improve our skills to the point of expertise. This expertise allows for IMTs to perform at a high level and effectively address the complexity and uncertainty that is inherent to our response environment. This is primarily because of the automation of effective process that occurs.

This automation allows us to be more effective at identifying and reacting to anomalies or to determine why an outcome did not align with our expectations. We are more resilient. This is where IMTs operate.

**Misguided Attempts to Provide COVID-19 Guidance**

Since the emergence of COVID-19 there has been an attempt to provide guidance on how to deal with the impacts of this pandemic. This guidance has been overwhelming in volume, differs by agency, and includes significant ambiguity. The requirements are unrealistic for the incident environment and the transient nature of our workforce. This information is combined with individual risk tolerances, beliefs, cultural norms, and efforts from decision makers at all levels to apply the guidance to create the preconditions for failure. This failure can occur in different ways.

First, we misapply previous practices and processes because we lack the relevant knowledge and do not recognize contradictions. Then the stress of unclear direction, information overload, and a high ratio of noise from multiple agencies and multiple levels compounds the stress. Finally, the stress, complexity, and previous cultural norms drives decision makers at all levels to fall back on previous practices that are ill-suited for the current environment. All this occurs *before* the first COVID-19 positive patient is ever diagnosed.

If we are going to take meaningful actions to minimize the spread of COVID-19 on incidents we need to recognize the difficulty associated with changing long-held practices at this level and focus our efforts on the cultural changes that must occur. This is a heavy lift and it cannot just be another addendum to a document, it needs to be the primary effort. The support for this effort and the willingness to use all available means to ensure compliance must be supported at all levels.

We must also make it clear that everyone on the incident is empowered to call out behavior that is inconsistent with this standard. Leaders, regardless of agency, must be willing to model the correct behaviors. Lastly, it must be understood that the guidance today is best when it is based on the best available knowledge. As the body of knowledge increases we will adapt our practices and the overarching goal should be the same.

Build a plan that is clear and concise and that everyone understands and can implement. It should be communicated clearly and consistently.

**This RLS was submitted by:**

**Jayson Coil**
**Operations Section Chief 1,**
**Southwest Area IMT 1**

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