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## Defending the front lines during the COVID-19 pandemic: Protecting our first responders and emergency medical service personnel



This is the first wave of COVID-19, indicating an impending second wave set to emerge in the coming winter [1]. Along with the concern for additional outbreaks, studies are showing inconclusive evidence regarding the effectiveness of antibody-mediated immunity in those recovered from COVID-19 [2]. The possibility of reinfection combined with another wave of COVID-19 further supports the need to protect our frontlines. The number of COVID-19 cases continues to rise to 1,053,036 infected people and a quarter-million deaths [3]. Given this situation, it is imperative that our frontlines are protected physically and mentally.

Though EMS protocols were established for an infectious disease outbreak, the magnitude of this crisis left our first responders with significant safety considerations [4]. This raises the question of how first responders ought to respond to calls during this pandemic to prevent patient-to-patient and patient-self transmission. Since only 43.8% of COVID-19 patients present with a fever, EMS must proceed with caution [5]. The use of PPE at all times is crucial to the protection of our frontlines, however, there is a massive PPE shortage [5,7]. The incredible global demand for PPE has led to worldwide shortages. Our frontlines are experiencing a lack of adequate N-95 respirators, gloves, face shields, and gowns [7]. In an effort to address this gap in supply and funding, the government increased PPE orders and provided \$100 million dollars specifically for EMS to purchase PPE [8].

Current EMS PPE strategies are focusing on reducing the number of responders needed to successfully care for a patient [9]. To reduce risk and PPE use, implementing designated triage centers adjacent to hospitals can expedite COVID testing while restricting possible routes of transmission to EMS staff. Another suggestion involves the use data collection to identify and track hotspots in the city while still working diligently with dispatch to determine the caller's risks of having COVID-19 [9]. When aware of hotspots, EMS personnel can make informed decisions. A further recommendation focuses on analyzing the data from the current outbreak to better diminish the impacts of the second wave [9]. With more data analyses, EMS can enforce proactive strategies to increase their efficiency without increasing their personal health risks.

One EMS institution designed a workforce protection program that includes: wellness screenings before each shift, PPE worn during the entire shift, check-ins for those out sick, rapid testing for those with symptoms, Return to Work program, and providing Hotel Housing options [5]. These EMS resources work to consider the safety of both the front-line workers as well as their families to preserve the EMS workforce.

Our most valuable resource is our first responders themselves. Without proper PPE our frontlines are at high risk of infection [2,5,6]. The PPE shortage cultivates role strain as first responders, must consider their duties to their patients versus their personal safety as well as the

wellbeing of their loved ones [10]. Addressing this concern, a suggestion is to hire non-EMS drivers in effort to conserve the workforce. In addition to conserving the workforce, it is possible to expand the front lines through the use of telemedicine [11]. By appropriately advising patients when and where to seek care, the EMS patient burden is decreased [11]. Following suit like other EMS institutions, the use of portable decontamination systems, particularly the use of vaporized hydrogen peroxide is recommended [12].

To further safeguard the health of our EMS team, their mental wellbeing must be bolstered. The effectiveness of EMS is significantly impacted as more deficits in job performances occur as stress and other negative mental health issues arise [13]. There exist stigmas and barriers to mental health care for first responders, causing an increased risk in chronic conditions such as PTSD [14]. EMS personnel also experience high levels of stress and depression [13–15]. Such health concerns can lead to incapacitated first responders, reducing the workforce [14,15]. Increasing mental health resources now can prevent current and future burnout and reduce the chronicity of mental health concerns [14]. The National Volunteer Fire Council provides a webinar mini-series titled Reset and Recharge [16]. Additionally, [EMS.gov](http://EMS.gov) hosts a web page for mental health resources [17]. These resources promote building staff-staff and family-family bonds in order to foster peer support during this pandemic. With peer support, EMS and first responders can connect with additional resources while also providing each other with a source of mental/emotional support.

During this pandemic, our frontlines have taken on a huge role in serving and caring for the population. We must take the necessary steps in providing ample resources and strategies for our EMS. Preparing for the next wave of COVID-19 includes anticipation of workers' needs, flexible plans and sustainable protocols and equipment [5,7].

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