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EMERGENCY MEDICINE COVID-19

Guidelines for Staff Safety

Emergency medicine physicians, nurses and allied health staff are working the front line of the massive wave of patients' sick with COVID-19, caused by the virus SARS-CoV2. In order to protect emergency department staff members minimum necessary measures should be considered. A review of emergency departments across the nation from state to state, city to city, and inner city to rural areas demonstrates that no consistent approach to emergency department safety regarding coronavirus COVID-19 exists.

Different departments and different agencies, as well as emergency department organizations, offer different and inconsistent approaches to protecting emergency department physicians, nurses, and allied health staff from becoming contaminated and ill from the COVID-19. Amazingly, many departments across the United States in fact are offering no mask, no goggles, no uniforms or limited protective equipment of any type. Physicians, nurses, and healthcare workers are left on their own to improvise protection.

This document provides guidelines for the minimum necessary protection that emergency department physicians, nurses, and allied health staff should consider against COVID-19 infection.

- All staff must arrive from home dressed in clean street clothes that are not expected to be infected as they have been recently laundered and dried in an electric or gas dryer. The SARS-CoV-2 an RNA viron surrounded by a capsid of fat is sensitive to washing with most laundry detergents in warm water and has not shown resistance. Additionally, SARS-CoV-2 is susceptible to killing by the heat generated by the proper operation of a standard electric or gas dryer.

- Just before arriving or upon arriving at the emergency facility, the staff member should shower from head to toe with soap and warm water. Soap is a highly efficient way of inactivating the virus. The virus forms bonds with skin that are easily broken with soap. Water alone is not nearly as effective. If the hair is not to be shampooed for personal reasons the hair must be placed in a clean, fresh covering of paper or cloth. Head or hair coverings should be disposable or washable daily.
- Remove all jewelry; watches and other non-essential wear that is not covered by clothing. Watches of all types are discouraged.
- Clean ID covered in plastic with disinfectant wipes or alcohol. Be aware of lanyards serving as significant fomites. Use cleanable clips to attach your identification to your uniform if possible. Otherwise wash lanyards daily. Some lanyards made of plastic can be wiped down with disinfectant wipes or alcohol.
- Clean cell phones – beware of cleaning phone covers. Clean your phone at least once a day. Phones are constantly touched throughout the day. “Manufacturer, Apple” instructions state clean phones with disinfectant wipes with gentle wiping motions and avoid getting any liquid in charging ports. Guidelines for Android users recommend no use of disinfectant wipes. An alternative is to use cleaning wipes that are specifically made for electronic devices. Individually wrapped lens and screen cleaning wipes are commercially available. Additionally, microfiber cloths also are commercially available. Microfiber has the ability to pick-up bacteria and can be laundered. Furthermore, a damp microfiber cloth can remove micro-organisms including viruses and bacteria and is more effective than a cotton cloth. Additionally, it will not damage your phone the way some disinfectants and sanitizers might. A homemade cleaner that is equal parts water and rubbing alcohol can be used to dampen the microfiber cloth, however, be sure it is not excessively wet then wipe down all parts of the phone. This will serve as an effective disinfectant. Wash hands before and after using the phone.
- Clean glasses/goggles/face shields. Protective eyewear is essential to protecting your eyes from COVID-19 infection. Growing numbers of

patients infected with COVID-19 have ocular symptoms. Viral conjunctivitis has been reported. Growing numbers of transmitted infections involve healthcare workers not wearing eye protection. There are only five avenues of entrance into the respiratory tract, two eyes, two nostrils and one mouth. All avenues should be covered and protected. Eyeglasses (spectacles) and goggles can be cleaned using the same techniques as described above for cell phones.

- Shave beards and facial hair to ensure best fit of masks and respirators. Keep hair cut short and tightly controlled. The CDC is not calling for the general public to shave their beards. There is no evidence that wearing a beard in and of itself promotes the spread of COVID-19. However, first responders, doctors and other medical professionals on the front line need to make sure their respiratory mask fits securely and tightly against the face. Accordingly, it is suggested that front line healthcare providers will need to remove beards and facial hair. An alternative for men with beards and facial hair would be to trim their facial hair in such a way as to allow a tight seal for a respiratory mask. Until more is known men maintaining facial hair should commit to shampooing this hair daily. Currently, there is no evidence that facial hair entraps the SARS-CoV-2 and funnels the virus to the face.
- Following a warm water shower from head to toe, either at home before arriving at the hospital, or at the hospital preferably, the emergency department staff will don hospital approved Personal Protection Equipment (PPE). Notably warm water is defined as “warm as you can stand it without burning yourself”. If PPE garments are not provided, scrubs and a white coat (or similar covering) is recommended to be provided to the healthcare worker by the hospital and stored at the hospital. Long sleeved garments, closed with zipper or button up closures, are a critical part of protection. SARS-CoV-2 readily bonds to exposed skin.
- Shoes. Bring a pair of shoes to use while at work. Before and after each shift, clean shoes used while working with disinfectant spray or wipes. Plan to leave these shoes at work or bag them carefully after cleaning and carry them with you as work shoes. It is recommend that you use slip on shoes with no laces making them easier to wipe down or spray down with

disinfectant spray or wipes. Travel shoes should be bagged upon arrival at your hospital and should become the travel shoes that you use to travel from the hospital to home and around the community. Even these travel shoes need to be cleaned regularly. Upon arrival at home take off your shoes and leave them in the garage, mud room, or another appropriate safe place. Remember, it is likely that your shoes will become contaminated at some point either in the community or at work with coronavirus particles.

- Eye covering such as over the spectacles goggles, face shields, or smaller goggles for emergency department workers without spectacles is necessary. Eye cover is an essential part of protection from the COVID-19.
- N95 mask or similar certified mask (KN95) should be worn for the entire duration of the medical shift typically 8 hours. The KN95 mask is equivalent and can be expected to function very similarly to the N95 mask. The higher the efficiency rating the more viral particles the respirator will filter out. These masks provide 95% efficiency and are not resistant to solids and liquids which contain oils. Body fluids and oils reduce efficiency of masks.
- N95 masks do expire. Mask components can degrade over time. Over time components such as the strap and nose foam may degrade which can affect the quality of the fit and seal on the facial skin. Additionally, expired respirators may potentially no longer meet the certification guidelines set by the National Institution for Occupational Safety and Health. (NIOSH)
- Filtering facepiece respirators: NIOSH has two designations for oil-based particle disposable respirators R95 and P95. The “R” rating is “somewhat resistant to oil mist for 8 hours”. The “P” rating is commonly referred to as oil Proof. The “N” rating is Not oil proof. As such: an N95 disposable respirator does not protect against oily particles whereas a R95 does. The respirators designated as P95 can also protect against oil particles and has a longer service life than the R95. Notably, a disposable N95 mask cannot be effectively cleaned or disinfected. All deformed masks may not fit properly and may not protect the user. All users of N95 respirators should complete a “fit test” to determine the best respirator model size for a particular user. OSHA requires fit testing for all employees who are required to wear tight

face piece respirators. To ensure that N95 particulate filter respirators and surgical masks provide the intended level of protection every wearer should receive training. A “fit test” tests the seal between the respirators face piece and your face. It takes about 15-20 minutes to complete and is performed at least annually. After passing a fit test with a respirator, use of the same make, model, style, and size respirator is required on the job. If the same make, model, style, and size respirator is unavailable and another respirator is provided, the fit test should be repeated. A video of the fit test can be found at www.osha.gov use search bar stating respiratory fit testing. A user “seal check” should be done every time the respirator is worn to ensure achievement of an adequate seal. A Federal OSHA video can be viewed on You Tube which demonstrates how to perform a user seal check using the N95 respirator.

- Face mask removal. Although no personal protection equipment should be removed for the entirety of your emergency room shift, certain precautions should be taken regarding the face mask. Beware that while using the face mask it is best to limit frequent adjustment of the mask by the hands so as to avoid touching the face. Ideally, N95 respirators should be worn for a maximum of 8 hours and should then be replaced regularly. However, OSHA has issued a directive which indicates that a respirator can be reused as long as it “maintains its structural and functional integrity and the filter material is not physically damaged or soiled”. Multiple videos available on You Tube demonstrate how the N95 respiratory mask can be properly removed. Briefly, first tilt the head forward and using two hands grab the bottom strap and pull to the side then over the head. Second, use both hands to grab the upper strap, pull to the side then over the head. Keep tension on the upper strap as you remove it, which will let the mask fall forward.
- Disposable gloves. Gloves will be utilized as needed on an individual patient basis. Gloves must be used when in contact with the patients’ blood, stool, or other body fluids such as saliva, sputum, nasal discharge, conjunctival discharge or tears, vomit, or urine. Wear disposable gloves while handling soiled items and keep soiled items away from the body. Clean hands with soap and water or an alcohol-based hand sanitizer immediately after removing gloves. Upon removal, place all used gloves in

a lined container. Non-sterile disposable patient's examination gloves are the type of gloves recommended to care for suspected or confirmed COVID-19 patients in healthcare settings. These are the same gloves used for routine patient care in all healthcare settings and are appropriate for the care of patients with suspected or confirmed COVID-19. CDC guidance does not recommend wearing double gloves when providing care to suspected or confirmed COVID-19 patients. Also, according to CDC guidance extended length gloves are not necessary when providing care to suspected or confirmed COVID-19 patients. If needed, instruction on sequencing regarding donning or doffing gloves or any PPE can be viewed online at www.cdc.gov.

- Contact with patient blood, stool or other body fluids as described above. It is advised that if any PPE, protective clothing or exposed skin are soiled, replace the PPE or protective clothing and clean the area(s) of exposed skin with soap and water for 20 seconds. After replacing clothing and PPE items or washing the exposed soiled skin, before returning to work, wash hands with soap and water or an alcohol-based hand sanitizer.

- It is acceptable for emergency medical services to wear coveralls as an alternative to white coats or surgical gowns in the care, treatment, and transport of patients with COVID-19. No clinical studies have been done to compare white coats, gowns, and coveralls, however, all are being used by healthcare workers in clinical settings during patient care. The CDC has released "considerations for selecting protective clothing used in healthcare for protection against micro-organisms in blood and body fluids". The CDC provides guidance in its comparison between gowns and coveralls including test methods and performance requirements. Coveralls typically provide 360-degree protection because they can be designed to cover the entire body including the back and lower legs and sometimes the head and feet as well. This added coverage may be necessary for some work tasks. However, coveralls may lead to increased heat stress compare to gowns due to the total area of the body being covered by the fabric. Additionally, training on how to properly remove a coverall is important to prevent self-contamination of fabric coming into contact with the face. Comparatively gowns are easier to don and doff.

- Wash both hands for at least 20 seconds. Since most of us underestimate washing time, this is the equivalent of singing the Happy Birthday song twice. Wash hands with soap and water or use a concentration of 60% or more alcohol-based hand cleanser frequently and especially before and after each patient contact.
- COVID-19 transmission in stool/fecal materials. Fecal transmission has been reported. When toileting use extra precautions to clean toilet and bathroom including doorknobs after each use. Wash hands as instructed.
- At the end of each shift the healthcare worker will retire directly to the shower room when available. Emergency departments having a “shower room” available can accommodate an entire department by staggering “end of shift” scheduling. This would allow and accommodate an entire department at shift change by providing a staggered ending time for each shift i.e. providing 15-30 minutes of time for each worker to shower and leave the building. Alternatively, if the hospital does not have a “shower room” area for staff, then healthcare provider can go directly to the area assigned for removal of personal protection equipment. Use approved protocols for removal of protective equipment. Wash hands and any exposed areas of the body. Don clean clothes from home and return to home. Once arriving at home doff the clothes in the garage, mud room, or other appropriate room. Place clothes in a plastic bag and empty the bag in a washing machine and launder with warm water and soap. Go directly to a shower and take a complete head to toe soap and warm water shower. It is suggested that clothes that you were wearing when returning home and all towels used after showering should be placed in a washing machine and laundered.
- Entire uniform of PPE will be placed in appropriate receptacles prior to leaving the hospital. Separate receptacles will be provided for disposable respirator masks, shoe coverings, gloves, and disposable hair coverings. Reusable goggles to be cleaned and any personal clothing including cloth hair coverings should be carefully placed in a laundry bag. Goggles and clothing should be cleaned and provided on the next day for the emergency department workers. After doffing PPE and clothing the worker will complete a head to toe soap and warm water shower. During this shower

all hair including facial hair should be washed with soap and water. With two showers daily, caution should be exercised with workers having dry skin to prevent skin damage by using a body lotion of the worker's choice containing hydrating and lubricating elements.

- Freshly laundered clothes from home will be applied. These may be the same clothes, or a new set of clothes brought from home. Healthcare worker will retire to home clean. As an additional precaution, healthcare workers may also remove these clothes worn from work to home place them in the laundry and again shower. Also remember to clean your vehicle daily. Testing of motor vehicle upholstery has found COVID-19 particles on interior seats. Cleaning vehicle upholstery can be important particularly in the case of newborn infants being in the home or geriatric patients or immune compromised patients with significant underlying medical conditions. This extra step of precaution provides another opportunity to remove any SARS-CoV-2 accompanied the worker home. If this protocol is followed daily, the chances of infection are likely to be reduced.
- Front line healthcare workers and ancillary emergency department staff (e.g. maintenance, housekeeping) will be tested initially for COVID-19 and subsequently every three days throughout the pandemic. Despite reasonable precautions staff members can become infected at home and/or in the community such as when picking up groceries or other items while returning home.
- This process of personal hygiene should be repeated every shift for the duration of the pandemic.

Only by protecting front line healthcare workers with a comprehensive uniform approach to healthcare workers safety can we avoid or reduce morbidity and thus ensure maintaining adequate numbers of well-trained emergency room physicians, nurses, and allied health staff. The above guidelines should reduce morbidity and mortality resulting from this pandemic in both emergency department staff, their families, and emergency room patients.

It is strongly encouraged that all emergency departments across the nation adopt the above guidelines to attain a more optimal level of staff safety. SARS-CoV-2 is an RNA viron surrounded in a capsid of fat. Through dedicated scheduled cleaning of the ER and ICU treatment environments by trained staff members we can better control COVID-19 and reduce the viral load on the skin, eyes, nose, mouth and face. By following these guidelines, we should be able to further control/prevent the spread of this virus among healthcare workers. Environmental cleaning should include airducts and air filters. Viral particles have been reported in air filtration systems and AC ducts. Measures outlined in these guidelines, if followed, should increase emergency department staff safety. These guidelines might be considered minimal necessary measures to protect healthcare workers. For any questions, contact Terrance L. Baker, MD, MS, President of the American Association of Physician Specialists, info@aapsus.org

Respectfully submitted,

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