EMS Information Bulletin 2020-02

DATE: February 5, 2020

SUBJECT: Infection Control Measures

TO: PA Regional EMS Councils
PA EMS Agencies
PA EMS Provider

FROM: Bureau of Emergency Medical Services
PA Department of Health
(717) 787-8740

Emergency Medical Services (EMS) providers are a critical component of the Pennsylvania healthcare system. In many cases, EMS personnel may be the first to face unknown risks from unknown adversaries, adversaries that cannot be seen or heard such as the 2019 Novel Coronavirus (2019-nCoV). Despite these risks, our EMS providers drive forward to get the job done and this drive is cause for increased concern that EMS providers may not be properly protected.

Required equipment for all Pennsylvania Department of Health licensed ambulances include:

Personal Infection Control Kits. The components of these kits include:

- Eye Protection-Goggles-Clear & Disposable*
- Gown/Coat*
- Surgical Cap/Foot Coverings*
- Exam Gloves*
- Red Bags-(Per Infectious Control Plan)
- Sharps Container-(Per Infectious Control Plan)
- N-95 Respirator Mask*
- Hand Disinfectant/Cleaner-Non-Water (1 Container)*
- Disposable-One Set / Pair Per Responding Crew member

Disposable-one set / pair per responding crew member

Under normal circumstances and when used properly, the items identified above are more than adequate for infection control and cross contamination prevention against most communicable diseases we encounter, including 2019-nCoV. When these items are not use as designed, we are subjected to consequences, some with severe impacts including death.

Therefore, as the response to 2019-nCoV continues to evolve, the Bureau of EMS, in consultation with our subject matter experts in the Bureau of Epidemiology, would like to highlight a few important facts to ensure every EMS Agency responds safely and every EMS provider returns home to family and friends.

Eye Protection-Goggles-Clear & Disposable: The eyes are an open route to the mucus membrane and if not protected can easily allow infections to be spread. Regular prescription glasses and sunglasses do not provide adequate eye protection.

Proper eye protection should fit properly, reasonably comfortable and will have the "ability to protect against splashes, sprays and respiratory droplets. They should also "provide unrestricted vision and movement, should be durable and cleanable, and not impede other PPE items being used.

Respiratory Protection: A properly worn respirator will reduce exposures to airborne contaminants. Respirators come in various sizes and must be individually selected to fit the wearer's face and to provide a **tight seal**. A proper seal between the user's face and the respirator forces inhaled air to be pulled through the respirator's filter material and not through gaps between the face and respirator. Without a proper seal, the wearer subjects themselves to a potential exposure. Facial hair will not allow the wearer to obtain a proper seal!

Surgical masks are **not** respirators and will not prevent the inhalation of small airborne contaminants. Surgical masks should not be worn by EMS Providers to protect against 2019-nCoV. The surgical mask is a good infection control element when placed on the patient to limit the spread of infectious respiratory secretions.

Attached are a few resources for infection control program consideration and response to 2019-nCoV. The Centers for Disease Control and Prevention (CDC) website will have the most up to date information for preventing the spread and protecting ourselves from this disease.

Information on Respiratory Protection, from Infection Control Recommendations Against 2019 Novel Coronavirus (2019-nCoV)

Interim Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Patients Under Investigation for 2019-nCoV in Healthcare Settings, Updated February 3, 2020 (https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html)

Background

Infection control procedures including administrative rules and engineering controls, environmental hygiene, correct work practices, and appropriate use of personal protective equipment (PPE) are all necessary to prevent infections from spreading during healthcare delivery. Prompt detection and effective triage and isolation of potentially infectious patients are essential to prevent unnecessary exposures among patients, healthcare personnel, and visitors at the facility. All healthcare facilities must ensure that their personnel are correctly trained and capable of implementing infection control procedures; individual healthcare personnel should ensure they understand and can adhere to infection control requirements.

This guidance is based on the currently limited information available about 2019-nCoV related to disease severity, transmission efficiency, and shedding duration. This cautious approach will be refined and updated as more information becomes available and as response needs change in the United States. This guidance is applicable to all U.S. healthcare settings. This guidance is not intended for non-healthcare settings (e.g., schools) OR to persons outside of healthcare settings. For recommendations regarding clinical management, air or ground medical transport, or laboratory settings, refer to the main CDC 2019-nCoV website.

Definition of Healthcare Personnel (HCP) – For the purposes of this guidance, HCP refers to all persons, paid and unpaid, working in healthcare settings engaged in patient care activities, including: patient assessment for triage, entering examination rooms or patient rooms to provide care or clean and disinfect the environment, obtaining clinical specimens, handling soiled medical supplies or equipment, and coming in contact with potentially contaminated environmental surfaces.

Recommendations: Adherence to Standard, Contact, and Airborne Precautions, Including the Use of Eye Protection

- **Personal Protective Equipment**
  Employers should select appropriate PPE and provide it to HCP in accordance with OSHA's PPE standards (29 CFR 1910 Subpart I)external icon?. HCP must receive training on and demonstrate an understanding of when to use PPE; what PPE is necessary; how to properly don, use, and doff PPE in a manner to prevent self-contamination; how to properly dispose of or disinfect and maintain PPE; and the limitations of PPE. Any reusable PPE must be properly cleaned, decontaminated, and maintained after and between uses. Facilities should have policies and procedures describing a recommended sequence for safely donning and doffing PPE:
    - **Respiratory Protection**
      - Use respiratory protection (i.e., a respirator) that is at least as protective as a fit-tested NIOSH-certified disposable N95 filtering facepiece respirator before entry into the patient room or care area. See appendix for respirator definition.

- Disposable respirators should be removed and discarded after exiting the patient's room or care area and closing the door. Perform hand hygiene after discarding the respirator.
- If reusable respirators (e.g., powered air purifying respirator/PAPR) are used, they must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use.
- Respirator use must be in the context of a complete respiratory protection program in accordance with Occupational Safety and Health Administration (OSHA) Respiratory Protection standard (29 CFR 1910.134). Staff should be medically cleared and fit-tested if using respirators with tight-fitting facepieces (e.g., a NIOSH-certified disposable N95) and trained in the proper use of respirators, safe removal and disposal, and medical contraindications to respirator use.

Appendix: Additional Information about Respirators and Facemasks:

Information about Respirators:

- A respirator is a personal protective device that is worn on the face, covers at least the nose and mouth, and is used to reduce the wearer's risk of inhaling hazardous airborne particles (including dust particles and infectious agents), gases, or vapors. Respirators are certified by the CDC/NIOSH, including those intended for use in healthcare.
- Respirator use must be in the context of a complete respiratory protection program in accordance with OSHA Respiratory Protection standard (29 CFR 1910.134). HCP should be medically cleared and fit-tested if using respirators with tight-fitting facepieces (e.g., a NIOSH-approved N95 respirator) and trained in the proper use of respirators, safe removal and disposal, and medical contraindications to respirator use.
- NIOSH information about respirators
- OSHA Respiratory Protection eTool

Filtering Facepiece Respirators (FFR) including N95 Respirators

- A commonly used respirator is a filtering facepiece respirator (commonly referred to as an N95). Filtering facepiece respirators are disposable half facepiece respirators that filter out particles.
- To work properly, FFRs must be worn throughout the period of exposure and be specially fitted for each person who wears one (this is called "fit-testing" and is usually done in a workplace where respirators are used).
- Three key factors for an N95 respirator to be effective
- FFR users should also perform a user seal check to ensure proper fit each time an FFR is used.
- More information on how to perform a user seal check

See a list of NIOSH-approved N95 respirators

Powered Air-Purifying Respirators (PAPRs)

- Powered air-purifying respirators (PAPRs) have a battery-powered blower that pulls air through attached filters, canisters, or cartridges. They provide protection against gases, vapors, or particles, when equipped with the appropriate cartridge, canister, or filter.
- Loose-fitting PAPRs do not require fit testing and can be used with facial hair.
- A list of NIOSH-approved PAPRs is located on the NIOSH Certified Equipment List

Information about Facemasks:

- If worn properly, a facemask helps block respiratory secretions produced by the wearer from contaminating other persons and surfaces (often called source control).
- •Facemasks are cleared by the U.S. Food and Drug Administration (FDA) for use as medical devices. Facemasks should be used once and then thrown away in the trash.

Important Links and Additional Infection Control Resources

- Respirator Trusted-Source Information
- Respirator Fact Sheet

OSHA FactSheet

Respiratory Infection Control: Respirators Versus Surgical Masks

It is important that employers and workers understand the significant differences between these two types of personal protective equipment. The decision whether or not to require workers to use either surgical masks or respirators must be based upon a hazard analysis of the workers' specific work environments and the different protective properties of each type of personal protective equipment.

The use of surgical masks or respirators is one practice that may reduce the risk of infectious disease transmission between infected and noninfected persons. Since there is limited historical information on the effectiveness of surgical masks and respirators for the control of influenza during any previous pandemics, the effectiveness of surgical masks and respirators has been inferred on the basis of the mode of influenza transmission, particle size and professional judgment.

To offer protection, both surgical mask and respirators need to be worn correctly and consistently. If used properly, surgical masks and respirators both have a role in preventing different types of exposures. During an influenza pandemic, surgical masks and respirators need to be used in conjunction with interventions that are known to prevent the spread of infection, such as engineering and administrative controls (e.g., installing sneeze guards, teleworking) and work practices (e.g., cough etiquette, hand hygiene, and avoiding large gatherings).

Respirators

Respirators are designed to reduce a worker's exposure to airborne contaminants. Respirators come in various sizes and must be individually selected to fit the wearer's face and to provide a tight seal. A proper seal between the user's face and the respirator forces inhaled air to be pulled through the respirator's filter material and not through gaps between the face and respirator.

Respirators offer the best protection for workers who must work closely (either in contact with or within 6 feet) with people who have influenza-like symptoms. These generally include those workers who work in occupations classified as *very high exposure risk* or *high exposure risk* to pandemic influenza. For additional information on very high and high exposure risk occupations, please refer to OSHA Publication No. 3327, entitled *Guidance on Preparing Workplaces for an Influenza Pandemic*, which can be found at http://www.osha.gov/SLTC/pandemicinfluenza/index.html.

Where workers are required by employers to wear respirators, they must be NIOSH-certified, selected, and used in the context of a comprehensive respiratory protection program, (see OSHA standard 29 CFR 1910.134, or www.osha.gov/SLTC/respiratoryprotection/index.html). It is important to medically evaluate workers to ensure that they can perform work tasks while wearing a respirator. For many workers, medical evaluation may be accomplished by having a physician or other licensed healthcare provider review a respiratory questionnaire completed by the worker (found in Appendix C of OSHA's Respiratory Protection standard, 29 CFR 1910.134) to determine if the worker can be medically cleared to use a respirator. Employers who have never before needed to consider a respiratory protection plan should note that it can take time to choose an appropriate respirator to provide to workers; arrange for a qualified trainer; and provide training, fit testing and medical evaluation for their workers. If employers wait until an influenza pandemic occurs, they may be unable to implement an adequate respiratory protection program in a timely manner.

Surgical Masks

Surgical masks are used as a physical barrier to protect the user from hazards, such as splashes of large droplets of blood or body fluids.

Surgical masks also protect other people against infection from the person wearing the surgical mask. Such masks trap large particles of body fluids that may contain bacteria or viruses expelled by the wearer.

Surgical masks are used for several different purposes, including the following:

- Placed on sick people to limit the spread of infectious respiratory secretions to others.
- Worn by healthcare providers to prevent accidental contamination of patients' wounds by the organisms normally present in mucus and saliva.
- Worn by workers to protect themselves from splashes or sprays of blood or bodily fluids; they may also keep contaminated fingers/hands away from the mouth and nose.

Surgical masks are not designed or certified to prevent the inhalation of small airborne contaminants. These particles are not visible to the naked eye but may still be capable of causing infection. Surgical masks are not designed to seal tightly against the user's face. During inhalation, much of the potentially contaminated air can pass through gaps between the face and the surgical mask and not be pulled through the filter material of the mask. Their ability to filter small particles varies significantly based upon the type of material used to make the surgical mask, so they cannot be relied upon to protect workers against airborne infectious agents. Only surgical masks that are cleared by the U.S. Food and Drug Administration to be legally marketed in the United States have been tested for their ability to resist blood and body fluids.

For assistance, contact us. We can help. It's confidential:

U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)

Facial Hairstyles and Filtering Facepiece Respirators

*If your respirator has an exhalation valve, some of these styles may interfere with the valve working properly if the facial hair comes in contact with it.
†This graphic may not include all types of facial hairstyles. For any style, hair should not cross under the respirator sealing surface.

Source: OSHA Respiratory Protection Standard
https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standard&p_id=12716

Further Reading: NIOSH Respirator Trusted-Source Webpage
https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/respsource3fittest.html

Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health