

ASPR TRACIE Technical Assistance Request

Request Receipt Date (by ASPR TRACIE): 28 June 2019

Response Date: 3 July 2019

Type of TA Request: Standard

Request:

The requestor asked for technical assistance in obtaining informational training videos on Level C personal protective equipment (PPE) for pre-hospital healthcare providers.

Response:

The ASPR TRACIE Team reviewed existing Topic Collections; namely our [Bioterrorism and High Consequence Biological Threats](#), [Pre-Hospital](#), [Responder Safety and Health](#), [SARS/MERS](#), and [VHF/ Ebola](#) Collections. We also conducted a search online for additional relevant materials.

Section I in this document includes Level C PPE training videos. Section II provides links to additional resources related to PPE that may be helpful for reference purposes.

I. PPE Training Videos

Department of Emergency Health Services. (n.d.). [Emerging Infectious Diseases Videos for Prehospital Providers](#). (Accessed 7/3/2019.) University of Maryland Baltimore County.

This instructional series, comprised of nine modules, includes an introduction to infectious diseases, basic infection control concepts, considerations for PPE (including donning and doffing), personnel decontamination, patient transport, and transfer of patient care for patients with Ebola and other highly infectious diseases. **NOTE:** Click on the “Modules” button located on the top bar.

Palm Beach County Fire Rescue. (n.d.). [Donning & Doffing Level C PPE](#). (Accessed 7/3/2019.)

In this approximately 15-minute video, Captain Bob Kropa of Palm Beach County (FL) Fire Rescue provides a demonstration of how to properly don and doff Level C PPE.

The National Institute for Occupational Safety and Health. (2016). [Fentanyl: Preventing Occupational Exposure to Emergency Responders](#). Centers for Disease Control and Prevention.

Resources on this webpage include information on responder exposure risks, the use of PPE, and trends related to the illegal use of fentanyl across the U.S. A checklist is provided under the “Protecting Workers at Risk” link that lists PPE recommendations for protection against fentanyl. **NOTE:** A video related to preventing occupational exposure

to fentanyl is also located under the “Protecting Workers at Risk” link, under the “Emergency Responders” category.

University of Nebraska Medical Center. HEROES. (n.d.). [Level C PPE Training Videos](#). (Accessed 7/3/2019.)

HEROES provides an interdisciplinary approach to chemical, radiological, biological, and natural disaster emergency education. This website offers education on a variety of responder PPE issues (e.g., donning and doffing). **NOTE:** A search was conducted on the HEROES website for “Level C” and results generated multiple relevant videos provided in the URL in the citation. Additional videos not specific to Level C PPE can also be found on the following URL:

https://app1.unmc.edu/nursing/heroes/elc_all.cfm?cat=ppe&t=v.

II. Additional Relevant Resources

Abrahamson, S.D., Canzian, S., and Brunet, F. (2006). [Using Simulation for Training and to Change Protocol During the Outbreak of Severe Acute Respiratory Syndrome](#). *Critical Care*. 10(1): R3.

The authors trained 275 health care workers in two weeks on how to don PPE and perform resuscitation procedures for a patient in cardiac arrest using a high-fidelity simulator. Lessons learned from this initiative have implications for health care worker training, as well as care of patients with infectious respiratory diseases.

Association for Professionals in Infection Control and Epidemiology. (2014). [2014 Donning and Doffing PPE Competency Validation Checklist](#).

This checklist can be used by evaluators when testing healthcare professionals' ability to safely and effectively don and doff PPE.

Bratt, J., Robinson, A., and Alcorta, R. (n.d.). [Strategies and Considerations for the Deployment of EMS Personal Protective Equipment in Response to an Ebola Outbreak](#). (Accessed 7/3/2019.) Maryland Institute for Emergency Medical Service Systems.

This article describes protection of emergency medical services personnel through PPE, including requirements, PPE cost (and how to estimate it), PPE deployment strategies, and personnel requirements.

Centers for Disease Control and Prevention. (2015). [Guidance on Personal Protective Equipment to Be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On \(Donning\) and Removing \(Doffing\)](#).

This CDC webpage includes guidance on the types of PPE that should be used by those caring for patients with Ebola. It also includes steps for donning and doffing PPE as well as what trained observers should do to ensure these steps are followed.

European Union, European Centre for Disease Prevention and Control. (2014). [Safe Use of Personal Protective Equipment in the Treatment of Infectious Diseases of High Consequence: A Tutorial for Trainers in Healthcare Settings](#).

This training program provides information on the proper use of PPE at the point of care and shares information on procurement, preparedness, and capacity building.

Lowe, J., Jelden, K.C., Schenarts, P.J., et al. (2014). [Considerations for Safe EMS Transport of Patients Infected with Ebola Virus](#). (Abstract only.) Prehospital Emergency Care. 19(2).

The authors discuss the coordinated response between the Nebraska Biocontainment Unit (through the Nebraska Medical Center in Omaha) and Omaha Fire Department's EMS to transport patients with confirmed Ebola virus from West Africa from the airport to the high-level isolation unit. Three critical areas have been identified from their experience and are addressed in this article: ambulance preparation, appropriate selection and use of PPE, and environmental decontamination.

McLaws, M., Chughtai, A., Salmon, S., and MacIntyre, R. (2016). [A Highly Precautionary Doffing Sequence for Health Care Workers after Caring for Wet Ebola Patients to Further Reduce Occupational Acquisition of Ebola](#). American Journal of Infection Control. 44(7):740-744.

The authors reviewed video guidelines to identify exemplary doffing, which they defined as no used PPE surface coming into contact with mucous membranes, face, or hair.

Methodist Hospital for Surgery. (2014). [Buddy System for PPE Placement & Removal](#). Association for Professionals in Infection Control and Epidemiology.

This document outlines the steps for the "buddy system" for the placement and removal of PPE.

National Institute for Occupational Safety and Health. (2013). [Emergency Response Resources: Personal Protective Equipment](#). Centers for Disease Control and Prevention.

The information on this webpage focuses on PPE and includes the following categories: respirators; protective clothing; skin exposures; eye protection; and hearing protection. Links to related resources are provided.

New York State Department of Health, and New York State Emergency Medical Services. (2014). [Ebola Virus Disease \(EVD\) In-Service EMS Training Outline](#).

This document provides information on Ebola (e.g., how it is transmitted, signs and symptoms), and several recommendations to EMS personnel including use of PPE, cleaning EMS transport vehicles after transporting a patient with suspected or confirmed Ebola, follow-up and/or reporting measures by EMS personnel after caring for a suspected or confirmed Ebola patient, among others.

Occupational Safety and Health Administration. (n.d.). [PPE Selection Matrix for Occupational Exposure to Ebola Virus](#). (Accessed 7/3/2019.) U.S. Department of Labor.

The U.S. Department of Labor shares information on the type of PPE to be worn in various situations (e.g., normal work activities, casual interaction, providing medical and supportive care, cleaning and disinfecting environments, and dealing with waste).

Redd, S., Smith, P., Hewlett, A., et al. (2014). [Preparing for Ebola: What U.S. Hospitals Can Learn From Emory Healthcare and Nebraska Medical Center](#). (PowerPoint.) Centers for Disease Control and Prevention.

Speakers from the Centers for Disease Control and Prevention, the University of Nebraska Medical Center, Nebraska Biocontainment Unit, Emory's Serious Communicable Disease Unit, and Emory Healthcare share their lessons learned on healthcare system preparedness and treating patients with Ebola.

U.S. Department of Health and Human Services, U.S. Department of Homeland Security, U.S. Department of Labor, and U.S. Environmental Protection Agency. (2012). [Guidance for Protecting Responders' Health During the First Week Following a Wide-Area Aerosol Anthrax Attack](#).

This document provides guidance on post-exposure prophylaxis and vaccination, PPE, personal decontamination and hygiene, administrative and engineering controls, and pre-event vaccination for first responders, emergency management staff, public health and medical professionals, skilled support personnel, and critical infrastructure personnel who participate in the response to an anthrax attack.

U.S. Department of Justice, Drug Enforcement Administration. (2017). [Fentanyl: A Briefing Guide for First Responders](#).

To address the significant risk fentanyl can have on first responders who may come in contact with it, the Drug Enforcement Administration shares the history of the substance, describes fentanyl-related substances, and lists common illicit forms of the drug. It also shares information on responder exposure risks and treatment, PPE, and remediation and decontamination.

Williams, M. and Sizemore, D. (2018). [Biologic, Chemical, and Radiation Terrorism Review](#). StatPearls.

This article outlines biologic, chemical, and radiation terrorism and related issues for healthcare providers. The authors provide guidance on PPE, decontamination, and preparedness. A quiz based on information presented in the article is included as an additional education aide.