



Simulation: Use of eye protection when caring for a coughing patient

Time: 20 min including debrief

Max number of people per station: 6

Number of facilitators per station: 2 or 3

Supplies Needed:

- [Video- Cough Simulation](#)
- Equipment to show video in-person or virtually
- Live or virtual connection with learners
- Mechanism for learners to take notes
- Debriefing Tool for Simulation leader
- Disposable Gowns
- Gloves
- Mask
- Face shield or goggles
- Ambu bag/endotracheal tube connection
- Black light
- Fluorescent powder
- Chair
- Cleaning supplies (to remove florescent powder from any unintended surfaces)

Steps to Perform Simulation

Prior to the start of the simulation, add approximately ½ teaspoon of fluorescent powder at the Ambu bag/endotracheal tube connection. Take care when handling the ambu bag because this projects the powder out the end of the tube. Keep the ambu bag out of site until ready to use (the pretend patient can hold it in their lap).

The pretend patient should be positioned with their back to the audience, sitting in a chair. The facilitator should perform hand hygiene and don PPE (gown, gloves, mask and face shield/goggles), and then stand in front of the patient, facing them. The pretend patient should also don a mask to protect from powder dispersal.

When ready, the pretend patient will position the endotracheal bag and tube so that it is concealed by the individual who will then pretend to cough. Time the squeezing of the bag to conform to the cadence of the cough. This will project small amounts of the fluorescent powder into the environment and onto the facilitator's PPE. (It is helpful if the facilitator bends down toward the patients face (*incorrectly*), as if they are getting ready to perform a nasopharyngeal swab).

The lights can then be dimmed, and a black light can then be used to show how far those particles travel and where they land.



Debriefing Script*:

What: The importance of face and eye protection when performing procedures and patient care activities that are likely to generate splashes or sprays of blood and body fluids.

Why: Viruses and bacteria can be transmitted through eye contamination via the conjunctiva and the draining connection to the oropharynx.

When: Patient care activities that are likely to generate splashes or sprays of blood and body fluids (e.g., nasopharyngeal swabbing with higher likelihood of producing a cough or sneeze).

How: Wear goggles, a face shield and mask (or combination of these items) to add barrier protection for eyes, nose and mouth.

As facilitators use this video, stop and point out visual evidence of contamination during the black light reveal. Ask for responses to the video. Use this opportunity to make it applicable to the learners' setting. For example, learners may work in long term care facilities so make the setting relevant to their work. You may also use this during educational opportunities for support personnel such as environmental services or other healthcare workers such as respiratory therapists. Make sure to include information specific to those learners to they can better understand and apply the important teaching points. This segment is also useful when introducing the concepts of how to put on (don) and how to remove (doff) PPE in ways that protect the healthcare worker. Graphics provided by CDC are included in the Resource PPE section of this skills station.

Facilitator: Thank you for participating in this debriefing session about the importance of wearing eye protection when caring for a patient who is coughing. Let's discuss the key points and address any questions or concerns you may have.

Question 1: Why do you think eye protection is important?

Answer: Eye protection – either goggles or a face shield – is a part of recommended PPE because, in addition to getting in the nose and mouth, or being inhaled, some viruses, droplets and germs can get into the nose and throat through the tear ducts and cause infection.

Question 2: When caring for a coughing patient, where is a good place to stand?

Answer: Not directly in front of patient. Stand to the side of the patient (if possible).

Question 3: How can viruses infect you through the eyes?

Answer: Germs that land in the eyes, including tiny respiratory droplets that can carry virus, can travel through the tear ducts to your nose and throat and infect you. The virus can also infect the eye directly, like we see with pink eye.

Question 4: Are there activities during your workday that put you at risk of exposure to respiratory droplets, splashes, or sprays from patients that could land in your eyes?

Answer: Facilitate discussion (no wrong answers).

Question 5: What is the name of the thin lining that protects the eyes?

Answer: Conjunctiva

Question 6: Do eyeglasses count as eye protection?

Answer: Eye glasses may not provide adequate protection. You should wear a protective shields on the sides of the eye glasses to protect the side of your eyes from being contaminated. You can also wear goggles over your eyeglasses, or a face shield for adequate protection.

Facilitator: Thank you for your participation. Understanding the importance of appropriate technique and PPE when collecting respiratory samples is vital to preventing the spread of infections. If you have any further questions or need clarification on any topic, please feel free to ask.

***Disclaimer: Please follow this debriefing script. The skill of debriefing is a process that takes time and experience to learn. Please do not use these debriefing tools outside of this situation without appropriate knowledge and experience.**

Centers for Disease Control and Prevention (CDC). (2021, Apr 26). *Episode 10: Why is Eye Protection Recommended for COVID-19?* [Video]. Youtube. <https://www.youtube.com/watch?v=kkruNHsMbMY>

CDC (2017). Healthcare Infection Control Practices Advisory Committee. Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings—Recommendations of the Healthcare Infection Control Practices Advisory Committee (HICPAC). Updated November 2022. Retrieved December 12, 2022, from <https://www.cdc.gov/infectioncontrol/guidelines/core-practices/index.html>

CDC. (2020a). Using Personal Protective Equipment (PPE). COVID-19. https://www.cdc.gov/coronavirus/2019-ncov/downloads/A-FS_HCP_COVID19_PPE.pdf. Accessed July 4, 2022.

CDC. (2020b). Which procedures are considered aerosol generating procedures in healthcare settings? Available from <https://www.cdc.gov/coronavirus/2019-ncov/hcp/faq.html#Infection-Control>

Jensen PA, Lambert LA, Iademarco MF, Ridzon R. (2005). Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Healthcare-Care Settings, 2005. (2005). MMWR 54(RR17); 1-141.

Siegel JD, Rhinehart E, Jackson M, Chiarello L, Healthcare Infection Control Practices Advisory Committee. 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Am J Infect control. 2007 Dec 35(10 Suppl 2)S65-164. Available from <http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf>

Developed by the Kentucky Infection Prevention Training Center (KyIP, 2023). Used with permission.