

3.08 Protection During the Conduct of High-Risk Respiratory Procedures in Patients with an Emerging Infectious Disease (EID)

Purpose To prevent transmission of an EID to Healthcare Workers (HCWs) during procedures that produce high concentrations of respiratory droplets in the air.

Audience Personnel performing or assisting with high-risk respiratory procedures including but not limited to pulmonologists, pulmonary fellows, anesthesiologists, assistants in the bronchoscopy suite and respiratory therapists.

Policy Statement:

- I. High-risk respiratory procedures (aerosol-generating procedures) as defined by the Centers for Disease Control and Prevention (CDC).
 - A. Aerosolized medication treatments
 - B. Diagnostic sputum induction
 - C. Bronchoscopy
 - D. Airway Suctioning
 - E. Endotracheal intubation
 - F. Positive pressure ventilation by facemask (e.g., BiPAP, CPAP)
 - G. High frequency oscillatory ventilation (HFOV)
- II. High-risk respiratory procedures that may be performed on patients with an EID
 - A. High-risk procedures that may be performed without permission of the Healthcare Epidemiologist
 1. Aerosolized medication treatments
 2. Bronchoscopy
 3. Airway suctioning
 4. Endotracheal intubations
 - B. All other procedures listed above may be performed only with permission from and in consultation with the Healthcare Epidemiologist
- III. Performance of high-risk respiratory procedures
 - A. **HCWs who have not been fit tested with an N-95 mask or provided with a powered air-purifying respirator (PAPR) may not provide care to any patient with confirmed or suspected SARS or avian influenza.**

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B. Code Blues

1. Respiratory protection for any EID during a code blue will be provided by a PAPR.
2. An attempt will be made to minimize code blues in EID patients by early intubation of patients whose condition appears to be worsening prior to severe worsening of respiratory function resulting in cardiac arrest.
3. However, since Code Blues may occur at any place at any time, the following protocol will be instituted to provide protection to healthcare workers who respond to Code Blues.
 - a. Powered Air Purifying Respirators (PAPRs) will be used. PAPRs will be located in carts.
 - b. Each cart has an internal mechanism that will charge and maintain the charge for the batteries in each of the PAPRs.
 - c. Clinical Equipment Services (CES) will maintain the carts when there are no EID patients in the hospital. This will include maintaining the charge on the batteries of the PAPRs as well as checking and maintaining the function of the PAPRs.
 - d. When an EID case is admitted to the hospital, the admitting nurse will call CES and have one of the carts brought to the floor.
 - e. All code blues on EID patients will be attended by faculty and/or fellows from the Division of Pulmonary and Critical Care Medicine or faculty from the Department of Anesthesiology.
 - f. When a Code Blue is called, all HCWs who enter the patient's room must be wearing a PAPR. As HCWs arrive at the code site, they will don a PAPR, gown and gloves. Each HCW who will enter the room will be assisted in donning a PAPR, gown and gloves by an HCW who will not enter the room. The number of healthcare workers responding to a Code Blue should be kept to a minimum.
 - g. At the end of a Code Blue, while the PAPR is still in operation, each HCW will remove their gloves and then their gown. After exiting the room, the HCW will wash their hands with antiseptic soap and water or apply an alcohol hand rub. The power unit will then be shut off. The PAPR unit at the waist will be moved around to the front of the body. The screw on the ring that secures the PAPR hose to the unit should be loosened and the hose

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detached from the unit. This end of the hose should be held in one hand without touching any other part of the hose. While holding this end of the tube, both hands should be used to remove the hood taking care to avoid touching the front of the hood or shaking the hood. The hood with hose attached will then be dropped into a bag held by a coworker wearing gloves. Then the HCW will again wash their hands with an antiseptic soap and water or apply an alcohol hand rub. The coworker holding the bag will close the bag, remove gloves and wash hands or apply an alcohol hand rub. Last, the PAPR unit will be removed from the waist.

- h. The PAPR unit will be given to a respiratory therapist wearing gloves who will apply a quaternary ammonium disinfectant to the surfaces of the unit. The unit will be returned to the PAPR cart and plugged in. The respiratory therapist will then remove gloves and wash hands with an antimicrobial soap and water or apply an alcohol hand rub.
 - i. For decontamination of PAPR hoses, respiratory therapists will wear gloves. Each hose with attached hood will be carefully removed from its bag taking care to avoid self contamination. The hood will be carefully removed from the hose taking care to avoid self contamination and the hood discarded in a trash receptacle.
 - j. The PAPR hoses will be disinfected with a quaternary ammonium disinfectant following the manufacturer's instructions for decontamination.
 - k. After decontamination of hoses, respiratory therapists will remove their gloves and wash their hands with an antiseptic soap and water or apply an alcohol hand rub.
 - l. Respiratory therapists will be responsible for restocking the carts with disposable headpieces, gowns and gloves.
- C. Airway suctioning
1. **For airway suctioning in patients with the usual closed system suctioning device, the HCW will wear an N-95 mask and goggles covered by a disposable face shield for SARS and avian influenza or a surgical mask and goggles for swine influenza. (See Policy 3.02 Isolation of Patients with an Emerging Infectious Disease [EID] or a Possible EID)**
 2. Airway suctioning of patients without a closed suctioning system may be done only when wearing a PAPR.
 3. At the time of suctioning any patient, HCWs will also be

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- wearing a gown and gloves.
- D. Aerosolized medication treatments may be done only by a respiratory therapist wearing a PAPR. Any other HCWs in the room at the same time must also be wearing PAPRs.
 - E. Endotracheal intubation
 - 1. Elective intubation
 - a. Elective intubation may be performed only by pulmonologists, pulmonary fellows, anesthesiologists or attending physicians in the Emergency Department (ED) wearing PAPRs
 - b. The only nonphysician assistants who may be present in the room will be a respiratory therapist and a nurse wearing their PAPRs.
 - c. In addition to PAPRs, those performing or assisting with intubation will also be wearing gown and gloves.
 - d. After intubation, gloves and gown will be removed prior to leaving the room.
 - e. After exiting the room, the HCW will wash their hands with an antiseptic soap and water or apply an alcohol hand rub.
 - f. The PAPR will then be removed as described above in III.B.
 - 2. Emergent intubations other than Code Blues
 - a. Emergent intubation may be performed by any of the above mentioned physicians wearing a PAPR. (See elective intubations).
 - b. Emergent intubations excluding Code Blues.
 - 1) Everyone in the room in addition to the operator will wear a PAPR.
 - 2) Everyone in the room will also wear a gown and gloves.
 - 3) A respiratory therapist should be present at all emergent intubations.
 - 4) After intubation, gown and gloves will be removed prior to leaving the room.
 - 5) After exiting the room, the HCW will wash hands with an antiseptic soap and water or apply an alcohol hand rub. The PAPR will be removed as described above in III.B.
 - F. After aerosolized medication treatments and endotracheal intubations, surfaces in the rooms where such procedures take place must be decontaminated. Contact Environmental Services for decontamination of the room (See Policy 3.12 Environmental Cleaning and Decontamination for an Emerging Infectious Disease [EID]).
 - G. Bronchoscopy
 - 1. All bronchoscopies on EID patients will be performed at the

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- bedside.
2. Bronchoscopists and their assistants will wear PAPRs.
 - a. The only personnel who may be present at a bronchoscopy are the bronchoscopist, a respiratory therapist and a nurse.
 - b. Specimen containers will be tightly closed and the outside of the container decontaminated with a disinfectant prior to placing them into ziplock bags.
 - c. **The ziplock bags will each be placed into a separate ziplock bag held by an HCW outside of the room wearing an N-95 mask and gloves for SARS and avian influenza, or gloves and a surgical mask for swine influenza**
 - d. After completing the bronchoscopy, the bronchoscope will be double bagged for transport to the reprocessing area. The contaminated bronchoscope will be placed in a large plastic bag in the patient's room. The bagged bronchoscope will be double bagged by placing it into a bag held by an HCW outside the room. The HCW outside the room will wear gloves. After double bagging the bronchoscope, the HCW outside the room will remove gloves, wash hands with an antimicrobial soap and water or apply an alcohol hand rub.
 - e. Personnel will carefully remove gloves and then gown. After exiting the room, each HCW will wash their hands with an antimicrobial soap and water or apply an alcohol hand rub. The PAPR will then be removed as described in III.B. above.
 - f. All surfaces in the patient's room must be decontaminated immediately after the bronchoscopy. Contact Environmental Services for decontamination of the room. (See Policy 3.12 Environmental Cleaning and Decontamination for an Emerging Infectious Disease [EID]).
 3. Cleaning and disinfecting bronchoscopes after bronchoscopy.
 - a. The bronchoscope will be brought to the reprocessing area in the double bags.
 - b. **Bronchoscopes will be cleaned and disinfected by personnel wearing an N-95 mask for SARS and avian influenza or a surgical mask for swine influenza, goggles, gown and gloves.**
 - c. The person responsible for cleaning will open both the bags and place the scope into the cleaning sink.
 - d. The transport bags will be discarded into the regular trash.

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- e. The outside of the scope will be cleaned per protocol.
- f. The lumens of the scope will be brushed per protocol.
- g. All covers for ports will be removed per protocol and placed into the washer disinfectant.
- h. Once the scope has been cleaned, it can be taken to the washer disinfectant for high level disinfection.
- i. After the scope has been put into the washer disinfectant, the cleaning sink will be disinfected with a quaternary ammonium compound and all brushes and cloths used to clean the outside of the scope will be discarded into a trash receptacle.
- j. PPE will be removed according to All Barrier Precautions (See Policy 3.02 Isolation of Patients with an Emerging Infectious Disease [EID] or a Possible EID).