

Resuscitation (Code Blue) Guidelines

Updated July 26, 2021

What's Changed: Updated to align infection prevention precautions with the potential risk for colleague exposure to SARS-CoV-2 during resuscitation

NOTE: In circumstances where COVID-19 is not suspected or has been ruled out, first responders should employ standard precautions (and transmission-based precautions as required) due to potential exposure to blood, body fluids, or aerosolized droplets during resuscitation. Minimally, a procedural mask, eye protection and gloves should be worn by all colleagues involved with the resuscitation process. Early detection of deteriorating status and preventive measures should remain a priority to avoid potential exposure to infectious agents during resuscitation (Code Blue). Responders should follow all other HSA guidance for patient management during and after resuscitation.

Providers should consider early, controlled intubation for patients with worsening respiratory status (when high flow oxygen and proning are not aggressive enough) to avoid emergency intubations and codes.

RESUSCITATION (CODE BLUE) GUIDELINES FOR SUSPECTED/CONFIRMED COVID-19 PATIENTS:

- All providers must don full PPE, including N95 respirator, eye protection, gown, and gloves (see page 12, PPE Guidebook for exceptions) prior to entering the room and initiating resuscitation. PPE should be bagged and available for the code team on top of the cart.
- Minimize the code team who enter the room to the smallest number of caregivers possible. All support staff (pharmacist, scribe, runner) wait in the hallway outside the door.
- **Keep the code cart outside of the room in appropriate areas or where resuscitation supplies do not already exist within the room (such as those in emergency department trauma bays).**
- Once the code team colleagues are in the room with proper PPE, the defibrillator should be passed to them to place at the foot of the bed or on the bedside table.
- If the ministry uses an 'immediate use drug bag', the bag should be handed into the room.
- One colleague should remain near the code cart to hand code team necessary medications/supplies.
- When using PAPRs and other PPE during resuscitation, evaluate and mitigate challenges related to communication during a code. (ex. repeat back to ensure accuracy)

AIRWAY MANAGEMENT

Ventilation strategies should focus on limiting aerosolization risk.

- Before intubation, use a bag-mask device (or T piece in neonates) with a HEPA filter and a tight seal, or, for adults, consider passive oxygenation with a nonbreathing face mask covered by a surgical mask. If intubation is delayed, consider manual ventilation with a supraglottic airway or bag-mask device with a HEPA filter, tightly sealing the mask over mouth and nose.
- If intubation is delayed, an RT or another trained provider may place a supraglottic airway (LMA). There should be a supraglottic LMA on every crash cart.

- Definitive airway management may be achieved using rapid sequence intubation by an experienced laryngoscopist. Perform intubation utilizing a video laryngoscope to minimize aerosolization.
- **Chest compressions should be held during intubation**, until the endotracheal (ETT) cuff is inflated and the tubing is secured to bacterial/viral filter.
- Whenever manual self-inflating (bag) ventilation is used to ventilate the patient (via ETT or supraglottic LMA), a bacterial/viral filter must be secured between the airway device and the bag. There will be a bacterial/viral filter on every crash cart.
- After intubation, exposure to aerosolized viral particles can be reduced by connecting the endotracheal tube (ETT) directly to the ventilator, bypassing initial bag ventilation. Given the historic preference for bag ventilation during a code, providers may have concerns about adequate ventilation with a ventilator. However, research suggests that effective ventilation can be provided using conventional ventilator modes. (Local RHMs should assess their individual ventilator capabilities to ventilate during the provision of CPR, as well as ensure staff training and competence in advance of implementing this modality.)

Although there is no initial “best” setting, the following is a reasonable suggestion:

- Mode: volume control or pressure-regulated volume control
 - Tidal Volume: 6 mL/kg ideal body weight (400-450 mL would be a reasonable default)
 - Rate: 10 breaths/minute
 - PEEP: Zero (adjust as needed to balance lung volume and venous return)
 - FiO₂: 100%
 - Sensitivity: Very Low so that the chest compressions do not "trigger" the ventilator
- There will be times when the supervising provider or resuscitation leader will deem bag ventilation is needed. In those cases, consider the following steps:
 1. *Pause chest compressions for the least amount of time possible, just until the bag and filter are connected to the Endotracheal tube.
 2. RT or appropriate personnel may turn off and disconnect the ventilator from the endotracheal tube
 3. Place a bacterial/viral filter on the ETT
 4. Begin bag ventilation
 5. Resume chest compressions.
 - Regardless of the airway management strategy employed, continuous care should be taken to reduce any exhalation stream exposure to the involved personnel.
 - ***Chest compressions must be held** from the time RT disconnects the patient from the ventilator circuit until the bacterial/viral filter is placed. Extra caution should be taken to maximize the closed circuit between the patient and the ventilator, as this carries a lower risk of aerosolization compared to other forms of positive pressure ventilation
 - During defibrillation: Disconnect the manual self-inflating (bag) from the endotracheal tube but keep HEPA filter attached to the endotracheal tube.
 - For resuscitation of PRONED Patients: Refer to Proned Positioning of the Mechanically Ventilated Patient
 - A clear 1015 surgical U-drape can be used to cover the patient after placing a secured airway and if transported in the hall.

ROLES AND RESPONSIBILITIES: Inside the Room

- **Respiratory Therapist:** Places nonrebreather mask on patient; prepares video laryngoscope, ventilator, assists with/secures airway; may place supraglottic LMA performs

or assists with intubation and verification of tube placement. Manages airway and ventilation throughout resuscitation.

- **Provider/Code Leader:** Directs resuscitation
- **Anesthesia or other provider (if available):** Secures airway; may help with venous access
- **Nurse:** Place the defibrillator/monitor at the foot of the bed or on the bedside table. Assess patient and rhythm, place pads, establish venous access, administer medications, initiate and maintain chest compressions
- **Optional additional role(s):** assist with airway, line placement, chest compressions or other activity as needed.

ROLES AND RESPONSIBILITIES: Outside the Room

- **Pharmacist:** Stays outside the room, passes medications as needed.
- **Room Safety Monitor (dons full PPE):** May be supervisor, floor charge nurse or designated ICU nurse. Observes donning/doffing procedures, controls access to room. Manages supplies flowing into the room; places labs handed out of the room in Biohazard bags (on crash cart). Keeps hallway free of additional responders. May assist in room if needed.
- **Respiratory Therapist/PCT:** Stays outside the room unless requested; runs for supplies; may be asked to assist with compressions in prolonged code.
- **Scribe:** Documents actions that have been taken and medications given in the room.

POST CODE ACTIVITIES

- The Room Safety Monitor notifies EVS to clean the room STAT if patient is moved
- The Room Safety Monitor is responsible for ensuring proper doffing of PPE
- Primary Nurse is responsible for making sure equipment is properly cleaned or disposed of:
 - All disposable equipment in the room should be discarded even if unused.
 - Reusable equipment should be disinfected before leaving the room
 - Follow local procedures as established by site for notifying Pharmacy, securing and restocking code blue cart.
 - Place four full sets of PPE on cart to include gown, gloves, N95 respirator, eye protection
 - Replace intubation supplies: Video laryngoscope (if not provided by code team); laryngoscope stylets, plastic covers adult -3 and 4
 - Replace the DO NOT BRING CART INTO THE ROOM sign on the cart, if moved.
- If the patient remains in the same room following CPR/intubation, all personnel entering the room should **continue to use N95 respirator or equivalent and eye protection** and appropriate isolation precautions per Infection Control guidance for 46 minutes in standard room (assumes the room is providing 6 air changes/hour) or 23 minutes if performed in an airborne infection isolation room (AIIR). Isolation precautions would remain in effect based on whether patient is under investigation (PUI) or has confirmed COVID-19. If transport is necessary see Safe Transport of COVID+ Patients or PUIs.

For questions regarding air exchanges in specific environments, contact your Facilities department.

If the patient expires, follow guidance for Care of the Deceased COVID-19 Patient.

References

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