



UTSW/Parkland BioTel EMS ALERT

March 25, 2020

EMS ALERT 20-006

COVID-19 Pandemic: Minimization of Aerosol-Generating Procedures (AGPs)

Critical Points:

- In the setting of community spread of COVID-19, these are high risk procedures and should be utilized only in the care of critically ill patients.
- Utilization of any AGP requires strict use of PPE and hand hygiene as detailed below and in the previous COVID-19 EMS Alerts.

Purpose: To provide guidance on the minimized use of aerosol-generating procedures (AGPs) for patients with signs and symptoms of lower respiratory illness (such as COVID-19, influenza or pneumonia) during a pandemic or similar Dallas County public health emergency.

Background: Refer to previous EMS Alerts ([20-001](#), [20-002](#), [20-003](#), [20-004](#) and [20-005](#)) for information.

Definition: Aerosol-generating procedures (AGPs) include: nebulization; airway suctioning; bag-valve-mask (BVM) ventilation; high-flow nasal cannula (≥ 6 LPM); 100% O₂ non-rebreather mask (NRBM); non-invasive positive pressure ventilation support (CPAP and BiPAP); advanced airway insertion (SGA or ETT); and CPR.

The BioTel EMS System guidance below adheres to the current recommendations and best practices from expert sources (e.g. the WHO, US CDC, TX DSHS, DCHHS and national EMS Medical Directors).

Procedures, effective immediately:

1. Use AGPs only when absolutely necessary for patient care.
2. If possible, perform AGPs in an open space (e.g. outside the ambulance) or in a stationary ambulance with the rear doors opened and HVAC system activated.
3. Minimize the number of personnel present.
4. Follow PPE and Infection Control Guidance for ALL personnel as per EMS Alert [20-005](#), [CDC guidance](#), and agency-specific policies/procedures:
 - a. PPE includes a minimum of: N95 respirator; goggles or face shield; gown and gloves;
 - b. Special attention should be paid to PPE doffing procedures and to [hand hygiene](#).
5. Use the **minimum supplemental oxygen flow** needed to maintain an SpO₂ of at least 94%.
6. Minimize use of **suction** when possible.
7. For **nasal cannula** or **100% NRBM**, place a surgical mask on the patient, over the device.
8. For **bronchodilator therapy**:
 - a. Administer inhaled bronchodilators only if the patient's past/current medical history includes asthma, COPD or other chronic condition and if wheezes are present;
 - b. If it is available, assist the patient with his/her personal **metered dose inhaler (MDI)** for albuterol or albuterol/ipratropium (Combivent):
 - i. For standard MDIs, 5 puffs = approximately 1 nebulizer dose;
 - c. Administer **nebulized bronchodilators** if needed, **ONLY** if an MDI is not available.
9. For **corticosteroid therapy**:
 - a. Do not administer inhaled (e.g. beclomethasone, budesonide or fluticasone) or parenteral (e.g. methylprednisolone or dexamethasone) corticosteroids for suspected COVID-19;
 - b. Consider administering parenteral corticosteroids **ONLY** for acute asthma or COPD exacerbation or for anaphylaxis, per BioTel CPGs.

10. For **severe asthma, status asthmaticus with respiratory failure or impending respiratory arrest**, consider early use of IM epinephrine (1 mg/mL formulation), rather than nebulizer therapy:
 - a. Adult dose: 0.3–0.5 mg (0.3–0.5 mL) IM; Consult BioTel PEDI-Guide for pediatric dosing;
 - b. Use of magnesium sulfate, per BioTel CPGs, should also be strongly considered.
11. For **BVM ventilation**: use a 2-person technique if possible; continuously maintain a tight, two-hand seal; and provide gentle, one-handed breaths to prevent creation of aerosols:
 - a. Listen for escaping air and monitor PetCO₂ to detect seal leak.
12. For **BVM, CPAP/BiPAP or advanced airway**:
 - a. Consider using a PEEP valve, if available and there are no contraindications;
 - b. Utilize a viral or HEPA filter, if available;
13. For **CPAP/BiPAP, ensuring good mask seal with no leaks**:
 - a. Avoid use unless absolutely necessary to prevent respiratory failure and/or intubation;
 - b. If tolerated by the patient, turn on airflow immediately after mask application and discontinue air flow just prior to mask removal.
14. For patients who require an **advanced airway, an SGA (King or i-gel)** is the airway of choice.
 - a. For SGAs, consider pre-placement of a viral or HEPA filter, if available, on the device prior to insertion in order to minimize release of aerosols in spontaneously breathing patients;
 - b. For SGAs with a gastric port, cover the port with tape;
 - c. Utilize a swivel adaptor with port, if available, and suction through the port rather than disconnecting the circuit to suction directly through the advanced airway;
 - d. Endotracheal intubation has been shown to pose the highest risk activity for healthcare provider exposure to aerosols in prior SARS outbreaks:
 - i. Therefore, endotracheal intubation should be a last resort and performed with extreme caution in any patient with suspected COVID-19;
 - ii. The most experienced/proficient intubator should perform the procedure in order to minimize attempts and intubation time;
 - iii. If available, video laryngoscopy should be first-line for intubation, in order to maximize intubator distance from the patient.
15. For medical **cardiac arrest and CPR**:
 - a. All personnel, including the first responding team member, must don full PPE prior to patient contact (minimum: N95 respirator; goggles or face shield; gown and gloves):
 - i. Chest compressions-only CPR may be provided by a single rescuer in full PPE if other team members are delayed in donning their own PPE and are at least 6 feet away from the patient;
 - b. Place an SGA ASAP, with minimal interruptions to high-quality chest compressions;
 - c. Use a mechanical CPR device, if available;
 - d. To reduce exposure risk for other healthcare personnel, every effort shall be made to resuscitate all medical cardiac arrest patients IN THE FIELD until either:
 - i. ROSC has been achieved OR
 - ii. The patient meets criteria for field termination of resuscitation OR
 - iii. Unless otherwise advised by BioTel staff or a Medical Control Physician.
 - e. Follow all other relevant BioTel CPGs, including resuscitating the patient on-scene for a minimum of 10 minutes (or 20 minutes, if termination of resuscitation is appropriate).
16. For **all patients**, avoid intranasal (IN) medications in favor of IV/IO or IM, when possible.
17. **Upon EMS arrival to a receiving hospital**, ED staff may ask EMS to discontinue nebulizers and/or CPAP/BiPAP. ED providers may perform advanced airway management in the ambulance bay and, in rare circumstances when clinically appropriate, may terminate resuscitation if it is deemed futile.
18. For **all patients**, follow CDC, BioTel and agency-specific guidance for PPE doffing, hand hygiene and equipment/apparatus disinfection.
19. **Document and notify agency supervisor as soon as possible of any suspected PPE procedure breaks or personnel contamination.**

Refer to the next page for additional guidance on PPE, Infection Control and other topics

Selected resources for the latest, updated, authoritative guidance

Links & QR Codes to Interim Guidance (links accessed 03/23/2020)

[EMS Interim Guidance \(CDC\)](#)



[Personal Protective Equipment \(PPE\) Guidance \(CDC\)](#)



[N95 Respirator Information \(CDC\)](#)



[N95 Seal Check \(NIOSH\)](#)



[COVID-19 PPE Instructional Video \(NETEC\)](#)

UPDATED 02/19/2020



[Infection Control Interim Guidance \(CDC\)](#)



NEW! [PPE Optimization Guidance \(CDC\)](#)



NEW! [Healthcare Hand Hygiene FAQ \(CDC\)](#)



UTSW/Parkland BioTel EMS Professionals may contact BioTel or the [EMS Medical Direction Team](#) at any time with questions or concerns about this EMS Alert