

MEDICAL ADVISORY COUNCIL

Position Statement

MAC PS 2013-001

PREHOSPITAL USE OF NIPPV

Noninvasive positive pressure ventilation (NIPPV) provides ventilatory support to patients with moderate to severe respiratory distress. It has been shown, in both prehospital and hospital studies, to improve patient outcomes by decreasing air hunger, improving oxygenation, and decreasing intubation rates, mortality, and ICU length of stays. NIPPV is a relatively inexpensive and highly effective prehospital treatment modality. Available NIPPV systems deliver 4-20 cm H₂O of pressure support in the forms of continuous positive airway pressure (CPAP) or bilevel positive airway pressure (BiPAP), with the later providing differing levels of inspiratory and expiratory support.

It is the position of the Medical Advisory Committee that:

1. NIPPV is an accepted and important prehospital therapy for patients with moderate to severe respiratory distress.
 - a. NIPPV is preferred to invasive therapies (i.e. RSI and endotracheal intubation) in the prehospital environment in the appropriate patient population with intact airway reflexes and adequate mental status.
 - b. NIPPV can be used in patients with respiratory distress / failure from COPD, pneumonia, pulmonary edema.
2. NIPPV can be successfully and safely administered by attendants at the EMT-B level
3. Clinical protocols should be developed under the guidance of the EMS agency's medical director with consideration of the system's resources and practice environment.
4. Choice of specific NIPPV delivery system should be made in partnership between the medical director and agency leadership to meet both clinical and operational needs.
5. A training program should be developed with guidance of the medical director to include these key factors
 - a. Pathophysiology of acute dyspnea and respiratory failure
 - b. Physiology of NIPPV systems
 - c. Description of NIPPV mechanics used by system chosen by EMS agency
 - d. Indications and contraindications of NIPPV
 - e. Initiation and titration of NIPPV
 - f. Monitoring of patients on NIPPV
 - g. Management of adverse events

- h. Transition of care at the receiving hospital
 - i. Alternate care strategies
- 6. The EMS agency and medical director must develop and monitor adequate quality assurance measures to assure the safe use of NIPPV by its providers.
- 7. EMS agencies should partner with receiving hospitals to assure that NIPPV is promptly and seamlessly available to the patient following their arrival at the hospital.
- 8. EMS agencies in Kansas should evaluate and consider offering NIPPV to their patient population.

Approved by the Medical Advisory Council on March 12, 2013

Dr. Sabina Braithwaite
Chair, Medical Advisory Council

Daily J., Wang H. Noninvasive Positive Pressure Ventilation: Resource Document for the National Association of EMS Physicians Position Statement. *Prehospital Emergency Care*. 2011;15:432-438