



## EMS System for Metropolitan Oklahoma City and Tulsa 2020 Medical Control Board Treatment Protocols

DRAFT MCB Review 3/11/20, Effective 6/01/20, no prior versions – new protocol issuance

### 17L - POSITIVE END EXPIRATORY PRESSURE (PEEP)

A small amount of PEEP ranging between 5 and 10 cm/H<sub>2</sub>O prevents airway closure, increases the airway opening index and improves the efficiency of alveolar ventilation produced by chest compressions.

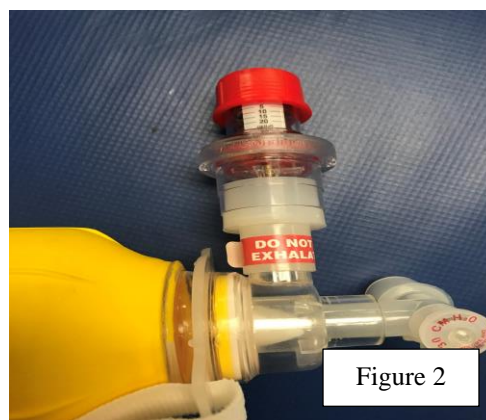
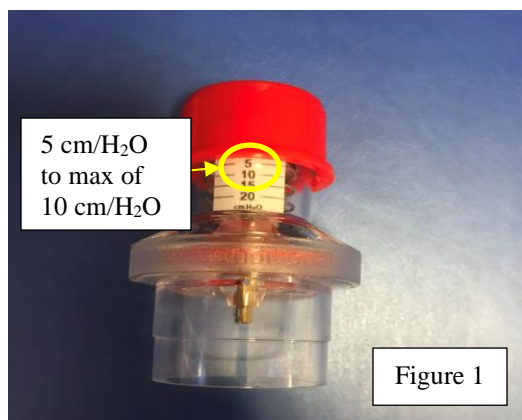
**Indication:** Any pediatric patient (Birth to 12 years of age) with an advanced airway.

Set PEEP device to 5 cm/H<sub>2</sub>O (Figure 1) and attach PEEP device to the Bag Valve Mask exhaust port (Figure 2). Attach Bag Valve Mask to endotracheal tube or supraglottic airway and provide ventilations per protocol 3A - Respiratory Arrest or 4A - Cardiac Arrest as indicated.

Rotate PEEP valve to increase pressure by 1 cm/H<sub>2</sub>O (clockwise ¼ turn) every 2 minutes until SpO<sub>2</sub> ≥ 94%. Max PEEP 10 cm/H<sub>2</sub>O.

**Clinical Note:** If patient has a congenital cardiac anomaly or other known medical condition with baseline SpO<sub>2</sub> <94% set PEEP device to 5 cm/H<sub>2</sub>O and titrate to upper limit of baseline SpO<sub>2</sub>.

**Attach ResQPOD™ to BVM if ≥ 12 years of age AND estimated patient wt ≥ 50 Kg.**





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### Medical Literature References 17L Positive End Expiratory Pressure (PEEP)

1. Nakashima, T., Kawazoe, Y., Iseri, T., Miyamoto, K., Fujimoto, Y., & Kato, S. (2020). The effect of positive end-expiratory pressure on stroke volume variation: an experimental study in dogs. *Clinical and Experimental Pharmacology and Physiology*, (January), 1–6. <https://doi.org/10.1111/1440-1681.13262>
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3. Grieco, D. L., Brochard, L. J., Drouet, A., Telias, I., Delisle, S., Bronchti, G., ... Richard, J. C. M. (2019). Intrathoracic airway closure impacts CO<sub>2</sub> signal and delivered ventilation during cardiopulmonary resuscitation. *American Journal of Respiratory and Critical Care Medicine*. <https://doi.org/10.1164/rccm.201806-1111OC>
4. Upadhyay R, K., Shenoy, L., & Venkateswaran, R. (2018). Effect of intravenous dexmedetomidine administered as bolus or as bolus-plus-infusion on subarachnoid anesthesia with hyperbaric bupivacaine. *Journal of Anaesthesiology Clinical Pharmacology*, 34(3), 46–50. <https://doi.org/10.4103/joacp.JOACP>
5. Sutherasan, Y., Raimondo, P., & Pelosi, P. (2015). Ventilation and gas exchange management after cardiac arrest. *Best Practice and Research: Clinical Anaesthesiology*. <https://doi.org/10.1016/j.bpa.2015.09.001>