Dr. Joel E Hornung, Chair Joseph House, Executive Director



Sam Brownback, Governor

MEDICAL ADVISORY COUNCIL Position Statement

MAC PS 2015-001 Rapid Sequence Intubation (RSI)/Drug-Assisted Intubation (DAI)

Prehospital airway management is currently the focus of intense investigation by EMS researchers throughout the world and presents a challenging topic to definitively address based on the current state of the science. Evidence is conflicting at this time on the risks/benefits of invasive prehospital airway intervention such as endotracheal intubation. However, at this time, several EMS services in Kansas authorize prehospital personnel to perform Rapid Sequence Intubation (RSI) or Drug-Assisted Intubation (DAI) in the field.

Regarding prehospital RSI/DAI, it is the position of the Medical Advisory Council that:

- 1) Any Kansas EMS system authorizing RSI/DAI should, in the opinion of the service Medical Director, have a demonstrated need for the procedure.
- 2) Adequate resources for development and maintenance of an RSI/DAI program should be available.
- 3) The Medical Director should lead the EMS service in the development of a system consistent with the standards established by the 2005 NAEMSP policy statement and the ACEP DAI policy statement written in 2005 and reaffirmed in 2011, including at least the following:
 - a. Medical Direction with concurrent and retrospective oversight
 - b. Training in proper patient selection
 - c. Training in back-up/rescue devices
 - d. Standardized protocols for medications administered during RSI/DAI
 - e. Resources for continuous monitoring before, during, and after airway intervention
 - f. Training and equipment for confirmation of airway device placement
 - g. Continuous Quality Improvement, performance review and supplemental training to assure procedure competence and proper patient selection
 - h. Research to clarify role and efficacy of RSI/DAI in EMS System
 - i. Resources to provide for safe storage and delivery of medications
- 4) Maintenance of both cognitive and procedural skill is paramount and should include, at a minimum, the program suggested by Cushman et al. in 2010 which demonstrated an increase in the appropriate use of RSI, as well as increases in use of CPAP, chin lift, and

intubation attempts without RSI. This was achieved by implementing the following methods:

- a. Providing at least 8 hours of annual continuing education on RSI/DAI by physicians
- b. Cadaver lab training
- c. Scenario-based simulation
- d. Intensive quality improvement and performance reviews
- e. EMS Physician review of every prehospital RSI/DAI record with feedback

References:

- 1) ACEP. <u>Drug-Assisted Intubation in the Prehospital Setting: Policy Statement.</u> Annals of Emergency Medicine. 2005; 46:214.
- 2) Bledsoe B, Slattery D, et al. <u>Can Emergency Medical Services Personnel Effectively Place</u> <u>and Use the Supraglottic Airway Laryngopharyngeal Tube (SALT) Airway?</u> *Prehospital Emergency Care.* 2011; 15:359-365.
- Bochicchio G, Ilchi O, et al. <u>Endotracheal Intubation in the Field Does Not Improve</u> <u>Outcome in Trauma Patients Who Present Without an Acutely Lethal Traumatic Brain</u> <u>Injury.</u> *Journal of Trauma*. 2003; 54:307-311.
- Burton J, Baumann M, et al. <u>Endotracheal Intubation in a Rural EMS State: Procedure</u> <u>Utilization and Impact of Skills Maintenance Guidelines.</u> *Prehospital Emergency Care.* 2003; 7:352-356.
- 5) Cady C, Weaver M, et al. <u>Effect of Emergency Medical Technician placed Combitubes on</u> <u>Outcomes After Out-of-Hospital Cardiopulmonary Arrest.</u> *Prehospital Emergency Care.* 2009; 13:495-499.
- 6) Carr B, Brachet T, et al. <u>The Time Cost of Prehospital Intubation and Intravenous Access</u> <u>in Trauma Patients.</u> *Prehospital Emergency Care.* 2008; 12:327-332.
- 7) Cushman J, Hettinger AZ, et al. <u>Effect of Intensive Physician Oversight on a Prehospital</u> <u>Rapid Sequence Intubation Program.</u> *Prehospital Emergency Care.* 2010; 14(3): 310-316.
- Davis D, Koprowicz K, et al. <u>The Relationship Between Out-of-Hospital Airway</u> <u>Management and Outcome Among Trauma Patients with Glasgow Coma Scale Score 8</u> <u>or Less.</u> *Prehospital Emergency Care.* 2011; 15(2):184-192.
- 9) Egly J, Custodio D, et al. <u>Assessing the Impact of Prehospital Intubation on Survival in</u> <u>Out-of-Hospital Cardiac Arrest.</u> *Prehospital Emergency Care.* 2011; 15:44-49.
- Franschman G, Peerdeman SM, et al. <u>Prehospital endotracheal intubation in patients</u> <u>with severe traumatic brain injury: Guidelines versus reality.</u> *Resuscitation.* 2009; 80:1147-1151.

- 11) Frascone R, Russi C, et al. <u>Comparison of prehospital insertion success rates and time to</u> <u>insertion between standard endotracheal intubation and a supraglottic airway.</u> *Resuscitation.* 2011; 82:1529-1536.
- 12) Gausche M, et al. Effect of Out-of-Hospital Pediatric Endotracheal Intubation on Survival and Neurological Outcome: A Controlled Clinical Trial. JAMA. 2000; 283:783-790.
- Hasegawa K, Hiraide A, et al. <u>Association of Prehospital Airway Management with</u> <u>Neurologic Outcome and Survival in Patients with Out-of-Hospital Cardiac Arrest.</u> JAMA. 2013; 309:257-266.
- 14) Hawkes A, et al. <u>A Prospective Multicenter Evaluation of Prehospital Airway</u> <u>Management Performance in a Large Metropolitan Region: Denver Metro Study Group.</u> *Prehospital Emergency Care.* 2009; 13:304-310.
- 15) Hubble M, Wilfong D, et al. <u>A Meta-Analysis of Prehospital Airway Control Techniques</u> <u>Part II: Alternative Airway Devices and Cricothyrotomy Success Rates.</u> *Prehospital Emergency Care.* 2010; 14:515-530.
- 16) Jacobs P, Grabinsky A. <u>Advances in prehospital airway management.</u> *Int J Crit Illn Inj Sci.* 2014; 4(1):57-64.
- 17) McMullan J, Gerecht R, et al. <u>Airway management and out-of-hospital cardiac arrest</u> outcome in the CARES registry. *Resuscitation*. 2014; 85:617-622.
- 18) O'Conner R. <u>Drug Assisted Intubation in the Prehospital Setting: Position Statement of</u> <u>the National Association of Emergency Physicians.</u> *Prehospital Emergency Care*, 2001; 5(1):40-48.
- 19) Shafi S. <u>Pre-Hospital Endotracheal Intubation and Positive Pressure Ventilation is</u> <u>Associated with Hypotension and Decreased Survival in the Hypovolemic Trauma</u> <u>Patients: An analysis of the National Trauma Data Bank.</u> *Journal of Trauma*. 2005; 59:1140-1145.
- 20) Stiell I, Nesbitt L, et al. <u>The OPALS Major Trauma Study: Impact of Advanced Life-Support on Survival and Morbidity.</u> *Canadian Medical Association Journal.* 2008; 178(9):1141-1152.
- 21) Tam R, Maloney J, et al. <u>Review of Endotracheal Intubations by Ottawa Advanced Care</u> <u>Paramedics in Canada.</u> *Prehospital Emergency Care*, 2009; 13:311-315.
- 22) Tiah L, Kajino K, et al. <u>Does Prehospital Endotracheal Intubation Improve Survival</u> <u>Outcomes among Adults with Non-traumatic Out-of-Hospital Cardiac Arrest? A Systemic</u> <u>Review.</u> Western Journal of Emergency Medicine, 2014, article in press.

- 23) Wang H, Yealy D. <u>Out of Hospital Endotracheal Intubation: Where Are We?</u> Annals of Emergency Medicine, 2006; 47:532-541.
- 24) Wang H, Balasubramani G, et al. <u>Out-of-Hospital Endotracheal Intubation Experience</u> <u>and Patient Outcomes.</u> Annals of Emergency Medicine, 2010; 55:527-537.
- 25) Wang H, Davis D, et al. <u>Prehospital Rapid-sequence Intubation—What Does the</u> <u>Evidence Show?</u> Prehospital Emergency Care. 2004 Oct-Dec; 8(4):366-77.
- 26) Wang H, O'Conner R, et al. <u>Patient Status and Time to Intubation in the Assessment of</u> <u>Prehospital Intubation Performance.</u> *Prehospital Emergency Care*, 2001; 5:10-18.
- 27) Wang H, Kupas D, et al. <u>Preliminary Experience With a Prospective, Multicentered</u> <u>Evaluation of Out-of-Hospital Endotracheal Intubation.</u> *Resuscitation.* 2003; 58:49-58.
- 28) Wang H, Szydio D, et al. <u>Endotracheal intubation versus supraglottic airway insertion in</u> <u>out-of-hospital cardiac arrest.</u> *Resuscitation*, 83 (2012):1061-1066.
- 29) Warner K, Carlbom D, et al. <u>Paramedic Training for Proficient Prehospital Endotracheal</u> <u>Intubation.</u> *Prehospital Emergency Care*, 2010; 14:103-108.
- 30) Warner K, Cuschieri J. <u>The Impact of Prehospital Ventilation on Outcome After Severe</u> <u>Traumatic Brain Injury.</u> *Journal of Trauma*. 2007; 62:1330-1336.
- *31)* Wirtz D, Ortiz C, et al. <u>Unrecognized Misplacement of Endotracheal Tubes by Ground</u> <u>Prehospital Providers.</u> *Prehospital Emergency Care;2007;* 11:213-218.
- 32) Youngquist S, Gausche-Hill M, et al. <u>Barriers to Adoption of Evidence-Based Prehospital</u> <u>Airway Management Practices in California.</u> *Prehospital Emergency Care*, 2010; 14:505-509.

Approved by the Medical Advisory Council on September 8, 2015

Dr. Ryan Jacobsen Chair, Medical Advisory Council