

EVIDENCE-BASED RESEARCH SUMMARY

CLINICAL EXCELLENCE AT AIR METHODS

AIR METHODS IS THE FIRST IN THE COMMUNITY-BASED AIR MEDICAL INDUSTRY TO ESTABLISH AN INSTITUTIONAL REVIEW BOARD (IRB).

Much like a university or research hospital, Air Methods has established an Institutional Review Board (IRB) that approves research to make sure it applies ethical methodology. Air Methods is the first pre-hospital company to create its own IRB. With a database of more than 10,000 intubation procedures, Air Methods derives statistical research from its operations nationwide to scientifically establish best practices.



HEAVEN CRITERIA / RSI CHECKLIST

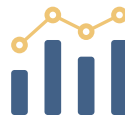
HEAVEN criteria rolled out in 2015, and they are now used companywide by Air Methods and have been adopted by several other groups in the U.S. and Latin America. Further research has helped us to understand our strengths and areas for potential sharpening. Air Methods developed this process so that it could accommodate the flight setting, the ground setting and “out-of-the-operating-room emergent airway experience.”

The criteria were derived through a retrospective review of records for more than 500 patients who needed rapid sequence intubation in an air medical setting. The criteria represent a set of difficult airway predictors that may be applied prospectively by emergency airway personnel, facilitating airway decision making. The results:

- Designed by Air Methods
- Recognized by the Commission on Accreditation of Medical Transport Systems (CAMTS) as a best practice
- Utilized not only within Air Methods, but also internationally and throughout the U.S.
- Implemented in journals, books and educational materials
- Changing practice to improve patient outcomes

HEAVEN STANDS FOR

-  **HYPOXEMIA**
-  **EXTREMES OF SIZE**
-  **ANATOMIC DISRUPTION / OBSTRUCTION**
-  **VOMIT / BLOOD / FLUID**
-  **EXSANGUINATION**
-  **NECK MOBILITY ISSUES / NEUROLOGIC INJURIES**



THE CRITERIA FOR HEAVEN WERE DERIVED THROUGH A RETROSPECTIVE REVIEW OF RECORDS FOR MORE THAN 500 PATIENTS WHO NEEDED RAPID SEQUENCE INTUBATION IN AN AIR MEDICAL SETTING.

EVIDENCE-BASED RESEARCH SUMMARY

CURRENT PUBLISHING & STUDIES

- Currently, we have more than 20 studies in progress or being developed.
- Air Methods has received one grant for Push Dose Pressor Study.
- VIPER Grant (Vasopressor Intravenous Push to Enhance Resuscitation)
 - Grant submitted to the MedEvac Foundation International in 2017 and grant awarded end of 2017.
 - As noted, this is Air Methods' first-ever research grant and an acknowledgement of how far we have come in a short time.
- We have published;
 - Four papers (see right sidebar);
 - Two papers submitted, pending acceptance; and
 - Two papers in draft to be submitted.

OUTCOME MEASURES

The outcomes of our studies have resulted in understanding trends and practices, and have allowed us to make adjustments to our policies and practices. We have been able to measure:

- The incidence of cardiac arrest (we know the baseline);
- The response of vital signs (especially blood pressure); and
- Adverse events related to administration (dysrhythmia, hypertension).

PUBLISHED JOURNALS

To read the abstract summaries for each article, click on the QR codes below or refer to the documents included in this packet.



Air Medical Journal

HEAVEN Criteria: Derivation of a New Difficult Airway Prediction Tool



Air Medical Journal

Systolic Blood Pressure Threshold for HEMS-Witnessed Arrests



Journal of Emergency Medicine

A Novel Difficult-Airway Prediction Tool for Emergency Airway Management: Validation of the HEAVEN Criteria in a Large Air Medical Cohort



Journal of Prehospital Emergency Care

A Continuous Quality Improvement Airway Program Results in Sustained Increases in Intubation Success



FUTURE PROJECTS & PLANS

With all our successes, we are just getting started and already have more projects in the works. These include:

- Partner with programs to work on outcomes-based research.
- Address requests from outside sources looking for our partnership/advisement.
- Take advantage of any potential opportunities to market our IRB program for studies.
- Develop charting system collaboration to look at large databases.
- Continue to follow and research evidence-based practice in the prehospital setting and the emergent setting, as well.