**Purpose:** Endotracheal intubation success rates in the prehospital setting vary across EMS systems. In King County paramedics report on every attempt and success of advanced airway management. These reports, including data on type of intubation, success rate, challenges, are reviewed by King County EMS and medical directors. These data were recently used by KC EMS and UW/ Harborview researchers to conduct a retrospective study to identify the challenges encountered and corrective actions taken during the process of endotracheal intubation.

**Methods:** All Airway Reports from January 2006 to December 2011 for all King County agencies were reviewed.

**Results:**

Flowchart detailing the process of paramedic airway management in 7,523 prehospital encounters. “Rescue RSI” refers to the use of a rapid sequence intubation strategy (i.e., neuromuscular blockade) to rescue a failed intubation attempt in cases where RSI had not been used during previous attempts. In this single case, a patient with distorted anatomy due to head and neck cancer suffered a witnessed, out-of-hospital cardiac arrest (full code status). Paramedics performed a surgical cricothyrotomy without attempts at endotracheal intubation.
Mosaic plot of first attempt intubation success for prehospital patients grouped by paramedic-assigned diagnostic category. The height of the dark bars represents the proportion of patients intubated on the first attempt; the width of each bar on the x-axis is proportional to the frequency of that diagnosis in the cohort.

**Conclusion:** Successful intubation was achieved in 99% of patients despite substantial challenges. This success is attributable to the cumulative efforts involving training and experience. The high level of performance in this critical skill is another important example of how EMS provides life-saving care for the residents of King County.