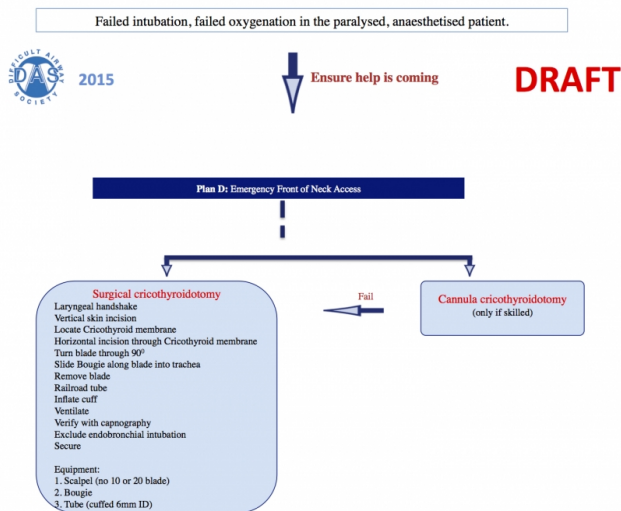


Is it time to deemphasize wire-guided emergency cricothyrotomy... YES

The Difficult Airway Society agrees in their upcoming 2015 updated [guidelines](#) they present an option for experienced users to perform a "cannula cricothyrotomy" but the default is a bougie assisted approach using a simple blade rotation dilating technique that AIME has been teaching for several years.



Bougie Assisted vs Wire Seldinger Cricothyrotomy: A Randomized Trial

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Introduction

Emergency airway management usually involves placement of an oral endotracheal tube using conventional devices. Failure to intubate itself poses no immediate threat unless combined with an inability to oxygenate. When Bag-mask ventilation (BMV) fails following failed intubation the clinician must act quickly. By definition this cannot intubate/cannot oxygenate represents a 'failed airway'. A rescue oxygenation approach should be attempted by placing an extraglottic device while concurrently preparing for a surgical airway.

The two most commonly reported methods are the 'open' and percutaneous Seldinger techniques. Success rates have varied, are inconsistent and associated with high complication rates. The **Bougie Assisted Cricothyrotomy (BAC)**, originally described for use by the American Military has not been evaluated in a comparative study.



Objective

Our objective was to compare the **BAC** to the wire-guided Seldinger cricothyrotomy (**WSC**) technique (Merkel Emergency Cricothyrotomy, Cook Medical). Primary outcomes were **success rates**, and **time to first ventilation**.

Methods

When a surgical airway is needed by definition, saturation are falling rapidly. Based on this fact and other studies a 4 second difference was considered significant. With a 95% confidence interval (CI) to achieve more than 80% power for detecting this difference, a sample size of 70 for each group was required.

71 paramedics with no experience with cricothyrotomy were recruited. They watched an instructional video for each technique and then were able to practice each on the manikin. Following this they were randomly assigned to first perform either the BAC or WSC. All participants performed both techniques on a neck model with anatomically correct landmarks and replaceable neck skins. **Success rates and time to first ventilation** were recorded.

Statistical analysis was performed using Student's t-test for the continuous variables, and Chi-square test for the categorical variables.

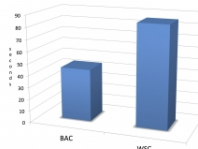
Results

Paramedics= 71 (n= 142)



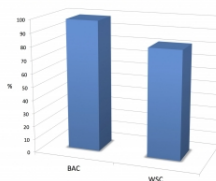
Time to First Ventilation ($p=0.000$)

•**BAC= 44.3 seconds** (95% CI= 41.6-47.0)
•**WSC= 85.8 seconds** (95% CI= 79.7-91.9)



Success Rate ($p=0.001$)

•**BAC= 98.6%** (95% CI= 92.4-100)
•**WSC= 81.7%** (95% CI= 71.0-89.1)



Conclusion

Bougie assisted cricothyrotomy was performed significantly more rapidly with a higher success rate by inexperienced users when evaluated on a cricothyrotomy simulator. Further evaluation using clinical grade cadaveric specimens would be helpful in validating this technique.



[Click here to watch video on YouTube](#)