Why Paramedics Should NOT be Trained in Endotracheal Intubation

A Plea for an Evidence-based Approach

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A Very Basic Consideration

- High Risk
- Low Frequency
Wang et al reported

As much as a 30% increase in mortality in traumatic brain injured victims who were intubated in the field
What did Wang find?

Intubation in the hands of many EMS professionals:
1. Over-manipulates the airway,
2. Causes aspiration
3. Causes prolonged hypoxia
4. Is a route for overventilation
5. Increases mortality 30% in TBI Patients

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Multivariate Predictors of Failed Prehospital Endotracheal Intubation

Henry E. Wang, MD, Douglas F. Kupas, MD, Paul M. Paris, MD, Robyn R. Bates, MS, Joseph P. Costantino, DrPH and Donald M. Yealy, MD

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Of 61 factors potentially related to ETI failure, multivariate logistic regression revealed the following significant covariates associated with ETI failure (odds ratio; 95% confidence interval; likelihood ratio p-value):

- **presence of clenched jaw/trismus**
  
  \( (9.718; 95\% \text{ CI} = 4.594 \text{ to } 20.558; p < 0.0001); \)

- **inability to pass the endotracheal tube through the vocal cords**
  
  \( (7.653; 95\% \text{ CI} = 3.561 \text{ to } 16.447; p < 0.0001); \)

- **inability to visualize the vocal cords**
  
  \( (7.638; 95\% \text{ CI} = 3.966 \text{ to } 14.707; p < 0.0001); \)

- **intact gag reflex**
  
  \( (7.060; 95\% \text{ CI} = 3.552 \text{ to } 14.033; p < 0.0001); \)

- **intravenous access established prior to ETI attempt**
  
  \( (3.180; 95\% \text{ CI} = 1.640 \text{ to } 6.164; p = 0.0005); \)

- **increased weight (ordinal scale)**
  
  \( (1.555; 95\% \text{ CI} = 1.242 \text{ to } 1.947; p = 0.0001); \)

- **electrocardiographic monitoring established prior to ETI attempt**
  
  \( (0.499; 95\% \text{ CI} = 0.084 \text{ to } 0.469; p = 0.0003). \)
In the massive Dallas Urban EMS System

Average Paramedic intubates once every two years
15. IF ETT Intubation is unsuccessful after ONE attempt, insert a Combitube.
MedStar
ET Intubation Success Rates
2004 - 2006
Intubation Success Rate
Why intubate?

To Prevent Aspiration!
Dr. Michael Frass

“"The Combitube prevents aspiration""
Dr. Ahamed Idris

“The King Airway prevents aspiration”
Dr. Slovis’ points PRESUMES excellence in training

But in training institutions all over EMS, OR training has become harder to find
The Impact of CPAP

Medical ETI have dramatically decreased
Thus, the occasion of the ETI of the “now”?

✔ Cardiac Arrest
✔ Apnea
✔ Airway Issues
Medics should be doing in the field what we would do in the ER

Never intubate for convenience...but for need

BVM is almost always OK
Medics should be doing in the field what we would do in the ER

That heroin OD GCS 6 protecting his airway with a good pulse ox may not need intubation
Cardiac Arrest

All evidence suggests now that ventilation is de-emphasized, esp. in the first five minutes...

...and BVM is OKAY!!!
Cardiac Arrest

Houston: King first
DFR: King first
Cardiac Arrest

ETI is no longer considered a useful route for medications
What is the future of airway management?
The Future of ETI in the field (and elsewhere)

Only instrument the trachea when the trachea needs instrumentation
What are the problems?

1. The Unprepped Airway
2. Deteriorating Skills
3. Patient Criticality
4. The Physiology of the Positioning of the Head
Who will still need endotracheal intubation?

1. Burn victims with swelling cords
2. Worsening vocal cord edema
3. Maybe epiglottitis
4. Laryngospasm
As to Pharmacologically Assisted Intubation

What is the risk of giving general anesthetics to critically ill patients?
Tracheal punctures will likely become more common
Who would need a puncture to the trachea?

1. Burn victims with swelling cords
2. Worsening vocal cord edema
3. Maybe epiglottitis
4. Laryngospasm
5. Fractured larynx/trauma
6. Foreign bodies
Finally upon Closing
To quote the esteemed Dr. Brent Myers...

*If it isn’t simple...*  
*...it simply won’t be done*
To quote the esteemed
W.C. Fields…

“Some weasel
took the cork
out of my lunch.”
To quote myself...

“It is a moral imperative to maintain professional standards with an ethical commitment.”
At the minimum, it speaks to the need to **NOT** allow PM to intubate unless they are:

1. **Well trained**
2. **Intubate frequently**
3. **QA program**
4. **Outcome data**
So…should PRIMARY training for PM include ETI?

NO!!!!!
So...should ADVANCED LEVEL training for PM include ETI?

YOU BET!!!
Each an area of breakdown
Five Reasons to Ditch Endotracheal Intubation

1. Never learned it well
2. Rarely do it
3. Little or no ConEd
4. No outcome data
5. Variable QA
Corey....COREY!!!

Come to the light!!!