

# Advanced Airway Management Training and Local Implementation

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# Case 1

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- ❑ 6 y boy
- ❑ MVA, Entrapped
- ❑ GCS 6-7, Biting
- ❑ Radial pulse +, 120
- ❑ Breath sounds +/+ ,RR 10
- ❑ Hypoxic with oxygen





# What should be done after patient is removed from the car?

HEMS Unit unavailable but consulted

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 Paramedics intubate with sedation

 Paramedics BVMV to the neurosurgical unit (120 km = 1,5 h)

 Spontaneous breathing in lateral position with oxygen

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# Things to be considered (1)

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## Condition

- Consciousness?
  - Level of hypoxia
  - Evidence of hypoventilation?
  - State of circulation?
  - Other injuries/Facial anatomy?
  - Response to treatment
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# Things to be considered (2)

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## Enviroment

- Entrapped/Not
- Geographic

## Individual

- Experience
- Team work /Team leading

## Procedure

- Always complex in prehospital setting
  - "Do no harm"
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# Paramedic ETI training

What is possible?

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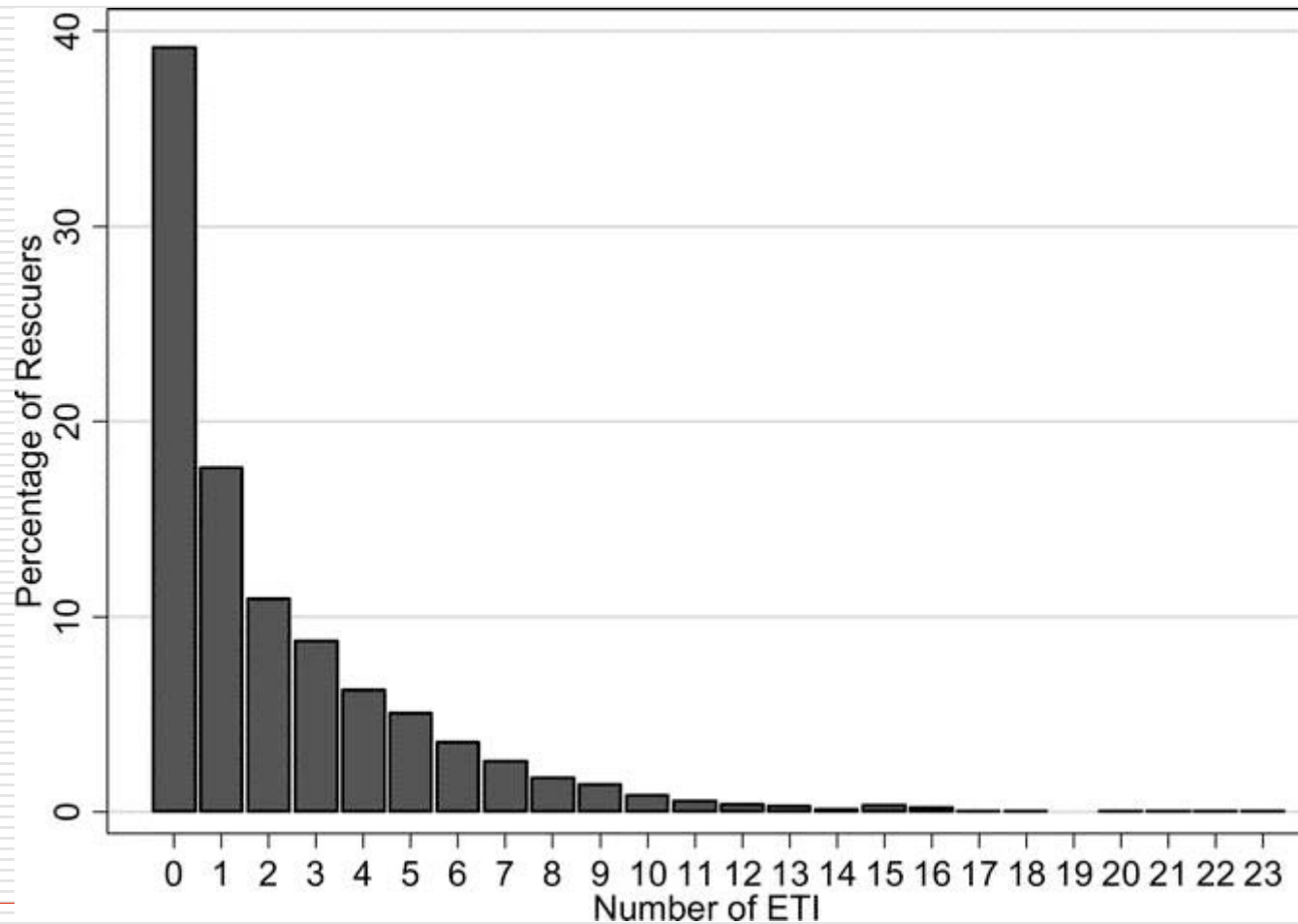
- 161 US Paramedic programs
  - Almost all used OR training
  - Median 17-32 h /student
  - Half less than 16 h
  - 6-10 ETI /Student
- Great Success???

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Johnston et al: Limited opportunities for paramedic student endotracheal intubation training in the operating room. Acad Emerg Med 2006

# Paramedic ETI experience

What is the real world?



Wang et al: Procedural experience with out-of-hospital endotracheal intubation Crit Care 2005

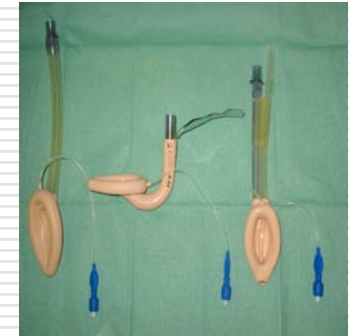
# Options?

## Airway (advanced) management for paramedics



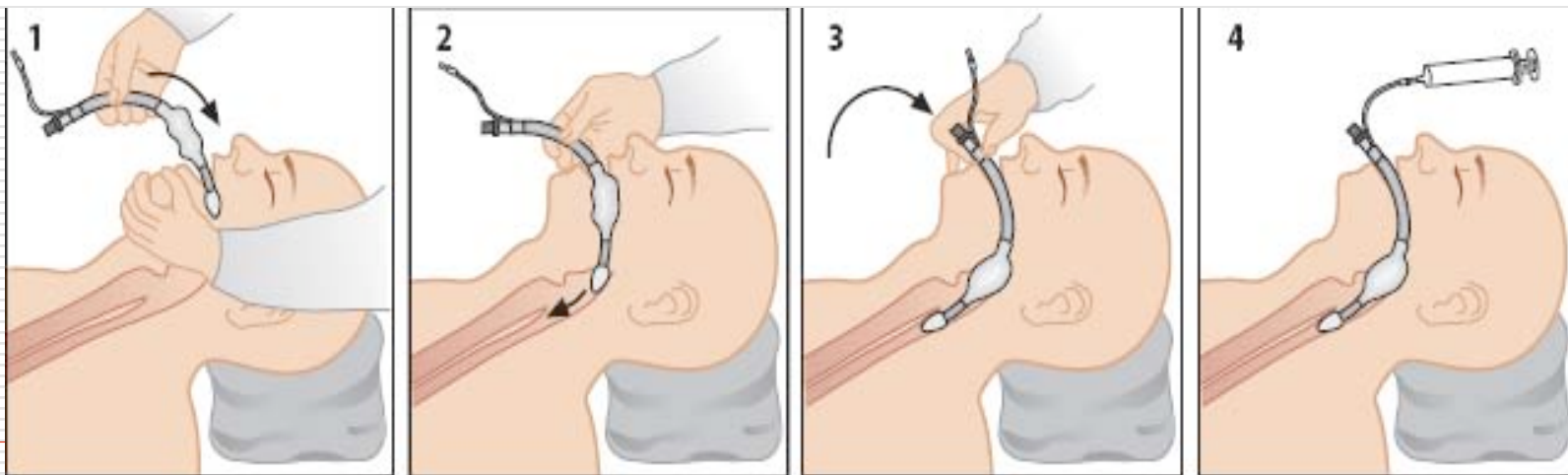
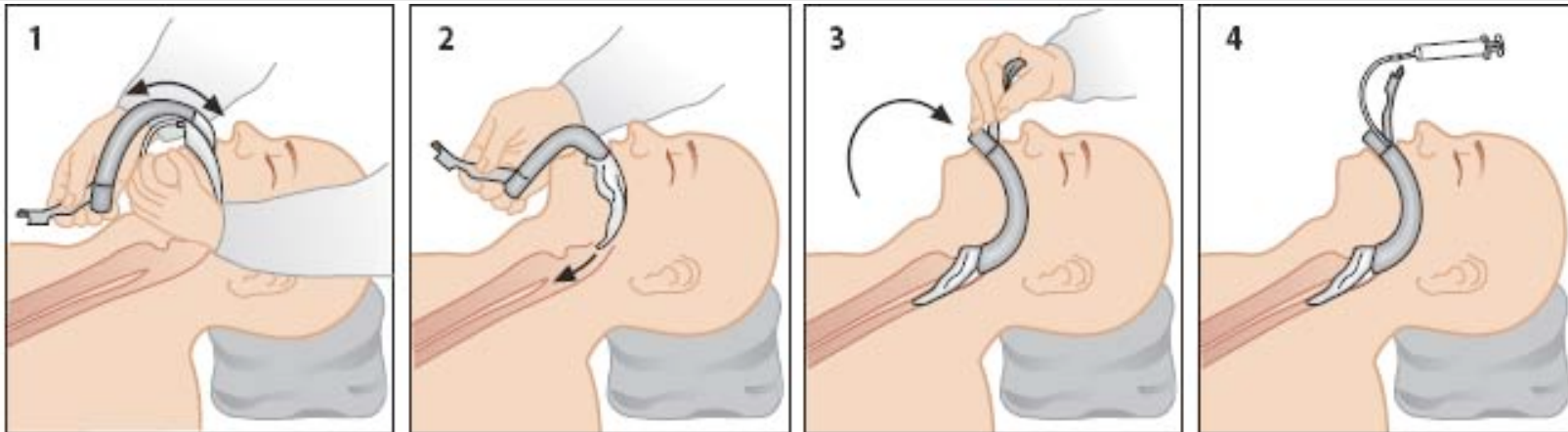
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Material: PVC  
Sterile packed



# Use of SAD:s

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# Local /National Implementation

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- Revision of training
    - Aims
    - Procedures
    - Teaching (Simulation-complex procedure)
  - Revision of attitude
    - ETI is NOT a mark of "superparamedic"
  - Revision of retraining and oversight
    - Local solutions/National database
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# Case 2

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- ❑ 78 y male
- ❑ History of Cerebrovascular disease
- ❑ Admitted to primary health care centre after confuseness
- ❑ GCS 5, SAP 190/-, SpO2 85 w. Oxy
- ❑ Aspirated?
- ❑ GP want to intubate




# To Intubate or not?

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 Do it- guidelines belongs to paramedics

 BVMV until reached secondary hospital or HEMS unit

 Spontaneous breathing w. lat position and oxygen

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# Pulmonary aspiration (1)

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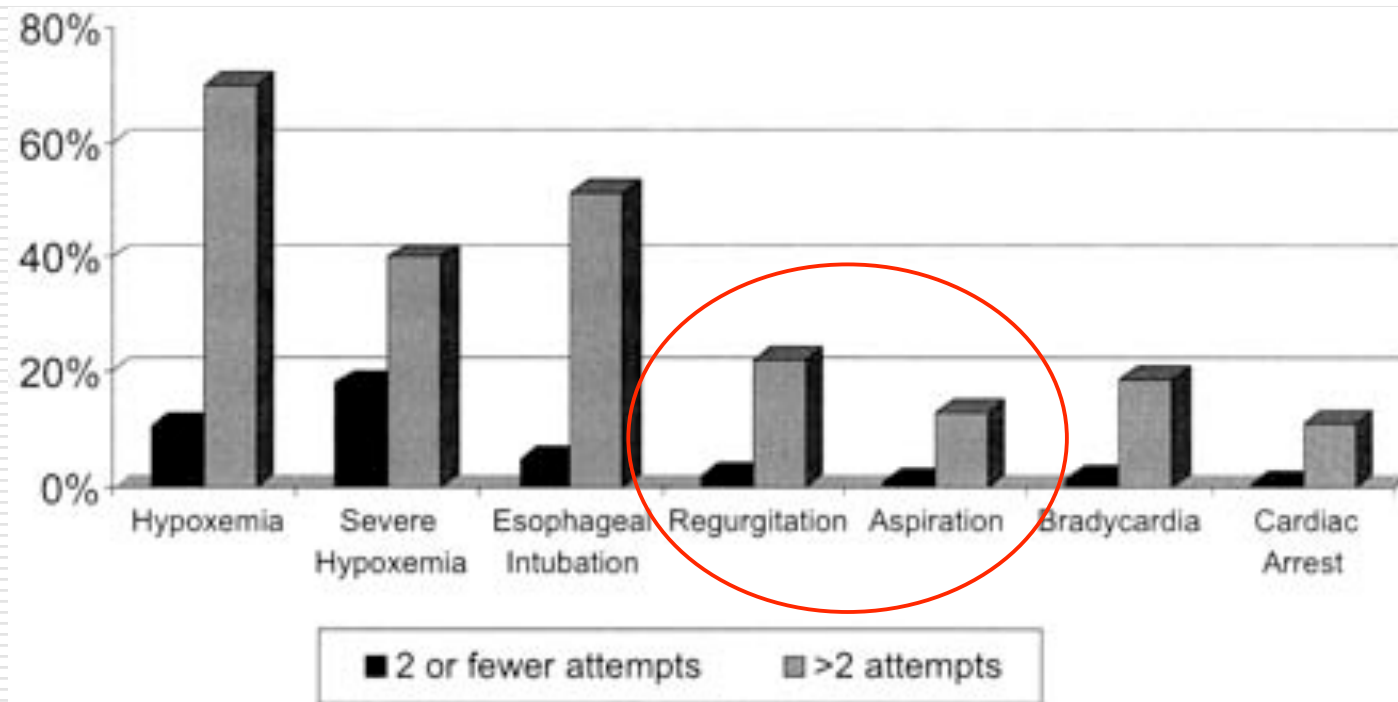
- Majority of TBI patients have aspirated before airway procedure\*
  - ETI more difficult and desaturation frequent
- Paramedic ETI in TBI\*\*
  - Don't prevent from aspiration

\*Vadeboncoeur et al: The ability of paramedics to predict aspiration in patients undergoing prehospital rapid sequence intubation J Emerg Med 2006

\*\*Davis et al: A follow-up analysis of factors associated with head-injury mortality after paramedic rapid sequence intubation J Trauma 2005

# Pulmonary aspiration (2)

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Mort TC: Emergency tracheal intubation: complications associated with repeated laryngoscopic attempts Anesth Analg 2004

# Pulmonary aspiration (3)

SAD:s?

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Airway device used	No. of patients	Regurgitation during CPR	Regurgitation after CPR
BVM (no LMA)	466	58 (12.4%)	7 (1.5%)
LMA (no BVM)	86	3 (3.5%)	0 (0%)
BVM and LMA	170	20 (11.8%)	8 (4.7%)

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Stone BJ et al Resuscitation 1998

# In-Hospital and Primary Care Implementation

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## Rationale

- Training/Retraining of primary care doctors often even worse than paramedics
- Finland: 3700 GP.s
- Gathering experience very difficult
  - EMS directing transportations to hospital

## Revision of medical curriculum

## Revision of attitude



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After all this....

I am convinced that...

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  Widespread use of ETI is OK (Incl. Paramedics and GP:s)

  Use of ETI should be restricted to the hands of experienced personnells (Anesthesiologist/Emergency physicians)

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