Quality Improvement Strategies for High Performance Airway Care

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Disclosures

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EMS Medicine Fellowship Director
  • Fellowship sponsored, in part, by Physio-Control
Are You Ventilating Effectively with a Bag-Mask?
Do You Know What is Really Happening During EMS Airway Management?
Are you an Eagle?
EVALUATION OF PHYSIOLOGIC ALTERATIONS DURING PREHOSPITAL PARAMEDIC-PERFORMED RAPID SEQUENCE INTUBATION

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EMS CARE SUMMARY

PATIENT
Male, 58 Years
DOB
Weight 200.0lbs - 90.7kg

COMPLAINT
skull fracture
unc/unr

NARRATIVE
58 yo male found down on front porch by neighbor. BLS arrived to find pt unc/unr w GCS 3.
vitals, bb/cc, trauma doc, iv Ir, etomidate 20 mg, suxx 150 mg, failed intubation attempt, recontact trauma doc, etomidate 20 mg, roc 100 mg, intubation 7.5 tube with bougie, mist in tube, positive lung sounds, negative epigastric sounds, etco2 53, o2 93, midaz 5 mg, morphine 10 mg, tx to hmc w m16.

VITALS
Initial 20:03:43 P 82, R 12, BP 142/100, BG 80, GCS 6=2+2+2, RTS 10
Final 20:45:21 P 116, R 21, EtCO2 40, SpO2 90

ASSESSMENTS
20:09:00 Mental Status: Unresponsive  HEENT: Head/Face: Blunt Injury Eyes: Left Pupil: 3-mm, Right Pupil: 3-mm

IMPRESSIONS
Injury of Head
Alcohol use
# EMS CARE SUMMARY

<table>
<thead>
<tr>
<th>Seattle Fire Department</th>
<th>Incident</th>
<th>Run</th>
<th>Date</th>
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</thead>
</table>

## PATIENT
- Male, 58 Years
- DOB
- Weight 200.0lbs - 90.7kg

## ADDRESS

## PAST HISTORY
- Unable to Obtain - Other Reason

## ALLERGIES
- Unable to Obtain - Other Reason

## MEDS
- Unable to Obtain - Other Reason

## INCIDENT LOCATION

## COMPLAINT
- skull fracture
- unc/unr

## NARRATIVE
58 yo male found down on front porch by neighbor. BLS arrived to find pt unc/unr w gcs 3.

- vitals, bb/cc, trauma doc, iv lr, etomidate 20 mg, suxx 150 mg, failed intubation attempt, recontact trauma doc, etomidate 20 mg, roc 100 mg, intubation 7.5 tube with bougie, mist in tube, positive lung sounds, negative epigastric sounds, etco2 53, o2 93, midaz 5 mg, morphine 10 mg, tx to hmc w m16.

## VITALS
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- **Final** 20:45:21 P 116, R 21, EtCO2 40, SpO2 90

## ASSESSMENTS
- 20:09:00 **Mental Status**: Unresponsive  
  **HEENT**: Head/Face: Blunt Injury  
  Eyes: Left Pupil: 3-mm, Right Pupil: 3-mm

## IMPRESSIONS
- Injury of Head
- Alcohol use
What Really Happened?

<table>
<thead>
<tr>
<th>Time</th>
<th>Parameter</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Value 3</th>
<th>Value 4</th>
<th>Value 5</th>
<th>Value 6</th>
<th>Value 7</th>
<th>Value 8</th>
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<td>20:20:48</td>
<td><strong>Oxygen FlowRate</strong>: 25 Device: Nasal Cannula (NC) Succeeded</td>
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<tr>
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<td>BP</td>
<td>PULSE</td>
<td>82</td>
<td>RR</td>
<td>15</td>
<td>SPO2</td>
<td>ETCO2</td>
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<td>20:24:48</td>
<td><strong>Etomidate</strong>: 20 Milligrams (mg) - Intravenous (IV)</td>
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<td><strong>Succinylcholine</strong>: 150 Milligrams (mg) - Intravenous (IV)</td>
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<td>33</td>
<td>BG</td>
<td>PAIN</td>
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Trends Report

Age: 58

Missing Pulse Oximetry

Intubation?
Let’s Watch the Movie
And 2 minutes later...
Airway Initiatives
Airway Adjuncts

Or0pharyngeal Airway (OPA)

Nasopharyngeal Airway (NPA)
Gold Standard Mask Seal
Gold Standard Mask Seal

2-person, 2 handed
- EMT at the head controls the airway and the mask
- EMT to the side ventilates by squeezing the bag

What are the signs of poor ventilation?
Waveform Capnography

Goal: Maintain end tidal carbon dioxide (EtCO$_2$)
- Target: 35-45 mmHg (in general...)

Ventilation modulates EtCO$_2$
How Do We Confirm Our Mask Seal and Ventilation Effectiveness?

BLS, ALS, Everyone...
EtCO₂ and BVM Ventilation

Good mask seal

Poor mask seal
Feedback

Good communication among the team

Inadequate dose of succinylcholine (160 mg vs 200 mg)
  ◦ Maybe distracted?

Bag better (almost always with a friend...)

Use your adjuncts

Adequate preoxygenation

Capnography is important to ALL providers
”Do you want to be an **Eagle**?”

“Or do you want to be a **Shitbird**?”

Be an **Eagle**!

Audio record and review **ALL** resuscitations and emergent intubations.

Mr. Success

*Sneaky Pete*