

Appendices

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EMS Airway Evaluation Form

Age Reference

Age	Procedure / Medication
0-1 Years Old	Infant CPR
1 Year And Older	AED (pediatric pads for 1-8 year old)
0-8 Years Old	Manual Intraosseous Device (As alternative to EZ IO device)
1-8 Years Old	Child CPR
12 Years And Older	Surgical Cricothyrotomy Adult Intubation for Intermediates Drug Assisted Intubation Protocol
Medications:	A pediatric patient is defined by the Broselow-Luten tape. If the patient does not fit on the tape, they are considered an adult.



On-Scene Physician Form



This EMS service would like to thank you for your effort and assistance. Please be advised that the EMS Professionals are operating under strict protocols and guidelines established by their medical director and the State of North Carolina. As a licensed physician, you may assume medical care of the patient. In order to do so, you will need to:

1. Receive approval to assume the patient’s medical care from the EMS Agencies Online Medical Control physician.
2. Show proper identification including current North Carolina Medical Board Registration/ Licensure.
3. Accompany the patient to the hospital.
4. Carry out any interventions that do not conform to the EMS Agencies Protocols. EMS personnel cannot perform any interventions or administer medications that are not included in their protocols.
5. Sign all orders on the EMS Patient Care Report.
6. Assume all medico-legal responsibility for all patient care activities until the patient’s care is transferred to another physician at the destination hospital.
7. Complete the “Assumption of Medical Care” section of this form below.

Assumption of Medical Care

I, _____, MD; License #: _____,
(Please Print your Name Here)

have assumed authority and responsibility for the medical care and patient management for

(Insert Patient’s Name Here)

I understand that I must accompany the patient to the Emergency Department. I further understand that all EMS personnel must follow North Carolina EMS Rules and Regulations as well as local EMS System protocols.

_____, MD Date: ____/____/____ Time: ____ AM/PM
(Physician Signature Here)

_____, EMS _____ Witness
(EMS Lead Crew Member Signature Here) (Witness Signature Here)



Apgar Score

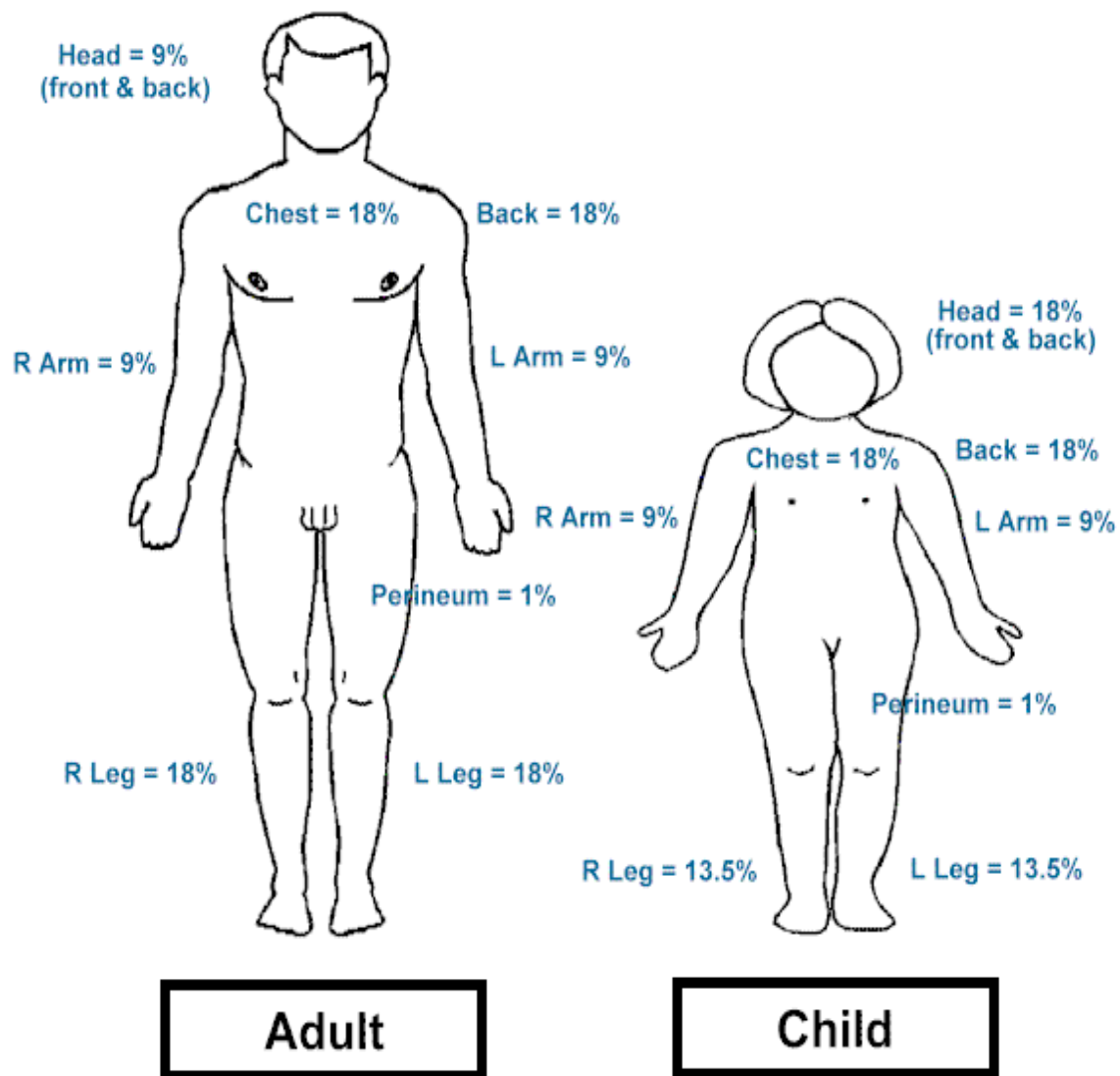


The Apgar score should be obtained and recorded initially and at 5 minutes with the birth of delivery of any infant.

- Each of the 5 parameters should be scored and then totaled.
- The Minimum score is 0
- The Maximum score is 10

Sign	0	1	2
Heart Rate	Absent	<100 min.	>100 min.
Respiratory Effort	Absent	Weak Cry	Strong Cry
Muscle Tone	Limp	Some Flexion	Good Flexion
Reflex Irritability (when feet stimulated)	No Response	Some Motion	Cry
Color	Blue; Pale	Body Pink Extremities Blue	Pink

Burn Reference



Fluids:

Infuse a total of $0.25 \times \text{Kg body wt.} \times \% \text{ TBSA}$ per hour up to the first 8 hours.

Formula example and a rule of thumb is: An 80 kg patient with 50% TBSA will need 1000 cc of fluid per hour.

A horizontal line scale from 0 to 10. Above the line, 'No Pain' is written above 0, 'Moderate Pain' is written above 5, and 'Worst Possible Pain' is written above 10.

**If you are having pain, tell your doctor or nurse.
Use these pain scales to describe your pain.**

No Hurt	Hurts Little Bit	Hurts Little More	Hurts Even More	Hurts Whole Lot	Hurts Worst

UNC Health Care Pain Management Committee
March 2001

A horizontal line scale from 0 to 10. Above the line, 'Sin dolor' is written above 0, 'Duele todavía más' is written above 5, and 'El peor dolor' is written above 10.

**Si tiene dolor, dígaselo a su doctor o enfermera.
Use esta escala para describir su dolor.**

Sin Dolor	Duele un poquito	Duele un poquito más	Duele todavía más	Duele mucho	El peor dolor

UNC Health Care
Pain Management Committee
March 2001

From Hockenberry MJ, Wilson D, Winkelstein ML; Wong's Essentials of Pediatric Nursing, ed. 7, St. Louis, 2005, p. 1259. Used with permission. Copyright, Mosby.



Restraint Checklist



Patient's Name: _____

PCR Number: _____ Date: _____

It is recommended that a Restraint Checklist be completed with any restraint use.

1. Reason for restraint (check all that apply):

- Patient attempting to hurt self
- Patient attempting to hurt others
- Patient attempting to remove medically necessary devices

2. Attempted verbal reassurance / redirection?

- Yes
- No

3. Attempted environmental modification? (i.e. remove patient from stressful environment)

- Yes
- No

4. Received medical control order for restraints?

- Yes _____, MD
- No (Medical Control Physician Name Here)

5. Time and Type of restraint applied (check all that apply):

Date: ____/____/____ Time: ____AM/PM

Limb restraints:

- LUE
- RUE
- LLE
- RLE

Chemical Restraint:

- Yes
- No

If Yes: Drug Used: _____

Total Dose: _____

6. Vital signs and extremity neurovascular exam should be taken every 10 minutes.

7. Transport Position (Patient should NOT be in prone position)

- Supine position for transport
- Lateral recumbent position for transport

Signature: _____

(EMS Lead Crew Member)



Approved Medical Abbreviations



The following is a list of approved medical abbreviations. In general, the use of abbreviations should be limited to this list.

A&O x 3	- alert and oriented to person, place and time
A&O x 4	- alert and oriented to person, place, time and event
A-FIB	- atrial fibrillation
AAA	- abdominal aortic aneurysm
ABC	- airway, breathing, circulation
ABD	- abdomen (abdominal)
ACLS	- advanced cardiac life support
AKA	- above the knee amputation
ALS	- advanced life support
AMA	- against medical advice
AMS	- altered mental status
AMT	- amount
APPROX	- approximately
ASA	- aspirin
ASSOC	- associated
BG	- blood glucose
BILAT	- bilateral
BKA	- below the knee amputation
BLS	- basic life support
BM	- bowel movement
BP	- blood pressure
BS	- breath sounds
BVM	- bag-valve-mask
C-SECTION	- caesarean section
C-SPINE	- cervical spine
C/O	- complaint of (complains of)
CA	- cancer
CABG	- coronary artery bypass graft
CAD	- coronary artery disease
CATH	- catheter
CC	- chief complaint
CEPH	- cephalic
CHF	- congestive heart failure
CNS	- central nervous system
COPD	- chronic obstructive pulmonary disease
CP	- chest pain
CPR	- cardiopulmonary resuscitation
CSF	- cerebrospinal fluid
CT	- cat scan
CVA	- cerebrovascular accident (stroke)



Approved Medical Abbreviations



D5W	- 5% dextrose in water
DKA	- diabetic ketoacidosis
DNR	- do not resuscitate
DOA	- dead on arrival
DT	- delirium tremens
Dx	- diagnosis
ECG	- electrocardiogram
EEG	- electroencephelogram
ET	- endotracheal
ETOH	- ethanol (alcohol)
ETT	- endotracheal tube
EXT	- external (extension)
FB	- foreign body
FLEX	- flexion
Fx	- fracture
g	- gram(s)
GI	- gastrointestinal
GSW	- gunshot wound
gtts	- drops
GU	- gastrourinary
GYN	- gynecology (gynecological)
H/A	- headache
HEENT	- head, eyes, ears, nose, throat
HR	- heart rate (hour)
HTN	- hypertension
Hx	- history
ICP	- intracranial pressure
ICU	- intensive care unit
IM	- intramuscular
IV	- intravenous
JVD	- jugular vein distension
kg	- kilogram
KVO	- keep vein open



Approved Medical Abbreviations



L-SPINE	- lumbar spine
L/S-SPINE	- lumbar sacral spine
L&D	- labor and delivery
LAT	- lateral
lb	- pound
LLQ	- left lower quadrant
LMP	- last menstrual period
LOC	- level of consciousness (loss of consciousness)
LR	- lactated ringers
LUQ	- left upper quadrant
MAST	- military anti-shock trousers
mcg	- microgram(s)
MED	- medicine
mg	- milligram(s)
MI	- myocardial infarction (heart attack)
min	- minimum / minute
MS	- mental status
MS	- mental status change
MSO4	- morphine
MVC	- motor vehicle crash
N/V	- nausea/vomiting
N/V/D	- nausea/vomiting/diarrhea
NAD	- no apparant distress
NC	- nasal cannula
NEB	- nebulizer
NKDA	- no known drug allergies
NRB	- non-rebreather
NS	- normal saline
NSR	- normal sinus rhythm
OB/GYN	- obstetrics/gynecology
PALP	- palpation
PAC	- premature atrial contraction
PE	- pulmonary embolus
PEARL	- pupils equal and reactive to light
PMHx	- past medical history
PO	- orally
PRB	- partial rebreather
PRN	- as needed
PT	- patient
PVC	- premature ventricular contraction



Approved Medical Abbreviations



RLQ	- right lower quadrant
RUQ	- right upper quadrant
Rx	- medicine
RXN	- reaction
S/P	- status post
SOB	- shortness of breath
SQ	- subcutaneous
ST	- sinus tachycardia
SVT	- supraventricular tachycardia
Sx	- symptom
SZ	- seizure
T-SPINE	- thoracic spine
T	- temperature
TIA	- transient ischemic attack
TKO	- to keep open (refers to IV's - same as KVO)
Tx	- treatment
UOA	- upon our arrival
URI	- upper respiratory infection
UTI	- urinary tract infection
VF	- ventricular fibrillation
VS	- vital signs
VT	- ventricular tachycardia
WAP	- wandering atrial pacemaker
WNL	- within normal limits
YO (YOA)	- years old (years of age)
M or ♂	- male
F or ♀	- female
+	- positive
-	- negative
?	- questionable
Ψ	- psychiatric
~	- approximately
>	- greater than
<	- less than
=	- equal



Approved Medical Abbreviations



↑	- upper (increased)
ā	- before
p̄	- after
c̄	- with
s	- without
Δ	- change
L	- left
R	- right
↓	- lower (decreased)
1°	- primary
2°	- secondary

Reperfusion Checklist

The Reperfusion Checklist is an important component in the initial evaluation, treatment, and transport of patients suffering from an acute ST-elevation myocardial infarction (STEMI) or acute Stroke. Both of these conditions can be successfully treated using fibrinolysis (thrombolytics) if the patient arrives at the appropriate hospital within the therapeutic window of time.

This form should be completed for all acute STEMI and acute Stroke patients.

Patient's Name: _____

PCR Number: _____ Date: _____

1. Has the patient experienced chest discomfort for greater than 15 minutes and less than 12 hours?

_____ Yes _____ No

2. Has the patient developed a sudden neurologic deficit with a positive Cincinnati Prehospital Stroke Screen?

_____ Yes _____ No

3. Are there any contraindications to fibrinolysis?

If any of the following are checked "Yes", fibrinolysis MAY be contraindicated.

- | | | |
|-----------|----------|--|
| _____ Yes | _____ No | Systolic Blood Pressure greater than 180 mm Hg |
| _____ Yes | _____ No | Diastolic Blood Pressure greater than 110 mm Hg |
| _____ Yes | _____ No | Right vs. Left Arm Systolic Blood Pressure difference of greater than 15 mm Hg |
| _____ Yes | _____ No | History of structural Central Nervous System disease (tumors, masses, hemorrhage, etc.) |
| _____ Yes | _____ No | Significant closed head or facial trauma within the previous 3 months |
| _____ Yes | _____ No | Recent (within 6 weeks) major trauma, surgery (including laser eye surgery), gastrointestinal bleeding, or severe genital-urinary bleeding |
| _____ Yes | _____ No | Bleeding or clotting problem or on blood thinners |
| _____ Yes | _____ No | CPR performed greater than 10 minutes |
| _____ Yes | _____ No | Currently pregnant |
| _____ Yes | _____ No | Serious Systemic Disease such as advanced/terminal cancer or severe liver or kidney failure. |

4. (STEMI Patients Only) Does the patient have severe heart failure or cardiogenic shock?

These patients may benefit more from a percutaneous coronary intervention (PCI) capable hospital.

- | | | |
|-----------|----------|---|
| _____ Yes | _____ No | Presence of pulmonary edema (rales greater than halfway up lung fields) |
| _____ Yes | _____ No | Systemic hypoperfusion (cool and clammy) |

If any contraindication is checked as "Yes" and an acute Stroke is suspected by exam or a STEMI is confirmed by ECG, activate the EMS Stroke Plan or EMS STEMI Plan for fibrinolytic ineligible patients. This may require the EMS Agency, an Air Medical Service, or a Specialty Care Transport Service to transport directly to a specialty center capable of interventional care within the therapeutic window of time.

Evaluating for the difficult airway

Between 1 – 3% of patients who require endotracheal intubation have airways that make intubation difficult. Recognizing those patients who may have a difficult airway allows the paramedic to proceed with caution and to keep as many options open as possible. It also allows the paramedic to prepare additional equipment (such as a cricothyrotomy kit) that may not ordinarily be part of a standard airway kit. The mnemonic LEMON is useful in evaluating patients for signs that may be consistent with a difficult airway and should raise the paramedic's index of suspicion.

Look externally

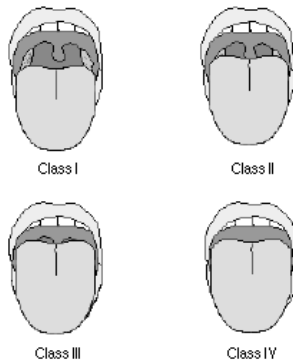
External indicators of either difficult intubation or difficult ventilation include: presence of a beard or moustache, abnormal facial shape, extreme cachexia, edentulous mouth, facial trauma, obesity, large front teeth or "buck teeth", high arching palate, receding mandible, short bull neck.

Evaluate 3-3-2 Rule

- 3 fingers between the patient's teeth (patient's mouth should open adequately to permit three fingers to be placed between the upper and lower teeth)
- 3 fingers between the tip of the jaw and the beginning of the neck (under the chin)
- 2 fingers between the thyroid notch and the floor of the mandible (top of the neck)

Mallampati

This scoring system is based on the work of Mallampati et al published in the Canadian Anaesthesia Society Journal in 1985. The system takes into account the anatomy of the mouth and the view of various anatomical structures when the patient opens his mouth as wide as possible. This test is performed with the patient in the sitting position, the head held in a neutral position, the mouth wide open, and the tongue protruding to the maximum. Inappropriate scoring may occur if the patient is in the supine position (instead of sitting), if the patient phonates or if the patient arches his or her tongue.



Class I (easy) = visualization of the soft palate, fauces, uvula, anterior and posterior pillars.

Class II = visualization of the soft palate, fauces and uvula.

Class III = visualization of the soft palate and the base of the uvula.

Class IV (difficult) = soft palate is not visible at all.

Obstruction?

Besides the obvious difficulty if the airway is obstructed with a foreign body, the paramedic should also consider other obstructers such as tumor, abscess, epiglottitis, or expanding hematoma.

Neck Mobility

Ask the patient to place their chin on their chest and to tilt their head backward as far as possible. Obviously, this will not be possible in the immobilized trauma patient.

Tricyclic Antidepressants (TCA)

Generic Names

Trade Names

Amitriptyline

Endep
Elavil
Etrafon
Limbitrol
Trional

Nortriptyline

Aventyl
Pamelor

Imipramine

Tofranil

Doxepin

Sinequan

Trimipramine

Surmontil

Amoxapine

Asendin

Desipramine

Norpramin

Protriptyline

Vivactil

Clomipramine

Anafranil

12 Lead ECG Reference

The following 12 Lead ECG variations should raise suspicion for ischemia, injury, or infarction:

Ischemia: ST depression, possible T wave inversion
Injury: ST elevation, possible T wave inversion
Infarction: ST elevation, possible T wave inversion, possible abnormal Q wave

ST elevation in the following leads should raise suspicion for AMI:

Inferior:	II, III, aVF
Septal:	V1, V2
Anterior:	V3, V4
Lateral:	I, aVL, V5, V6
Posterior	V7, V8, V9

North Carolina EMS Airway Evaluation Form

1. Patient Demographic Information

Date: ___/___/___ Dispatch Time: ___:___ am/pm

PCR # _____

EMS Agency Name: _____

Patient Age (yr): _____ Patient Sex: M F



The NC EMS Airway Evaluation Form is required to be completed with all Drug Assisted Intubations.

- It is recommended that this form be completed with all invasive airway procedures.

2. Indication for invasive airway management

- Apnea or agonal respirations
- Airway reflex compromised
- Ventilatory effort compromised
- Injury/illness involving airway
- Adequate airway reflexes/effort, potential for compromise
- Other _____

3. Was endotracheal intubation (ETI) attempted?

Yes No

4. If ETI not attempted, alternate method of airway support

- | | |
|---|---|
| <input type="checkbox"/> Bag-Valve-Mask (BVM) | <input type="checkbox"/> Combitube |
| <input type="checkbox"/> Needle Jet Ventilation | <input type="checkbox"/> LMA |
| <input type="checkbox"/> Open Cricothyrotomy | <input type="checkbox"/> Other Cricothyrotomy |
| <input type="checkbox"/> CPAP/BiPAP | <input type="checkbox"/> King LT-D |
| <input type="checkbox"/> Not Applicable (ETI Attempted) | <input type="checkbox"/> Other _____ |

5. Glasgow Coma Score (GCS) before intubation

Eye (1) none (2) pain (3) verbal (4) spontaneous

Verbal (1) none (2) incomprehensible (3) inappropriate words (4) disoriented (5) oriented

Motor (1) no response (2) extends to pain (3) flexes to pain (4) withdraws from pain (5) localizes pain (6) obeys commands

6. Level of training of each rescuer attempting intubation

Rescuer A	Rescuer B	Rescuer C
State ID: _____	State ID: _____	State ID: _____
<input type="checkbox"/> Paramedic <input type="checkbox"/> EMT-I <input type="checkbox"/> Medic Student <input type="checkbox"/> Nurse <input type="checkbox"/> Phys. Assist <input type="checkbox"/> MD/DO <input type="checkbox"/> Other: _____	<input type="checkbox"/> Paramedic <input type="checkbox"/> EMT-I <input type="checkbox"/> Medic Student <input type="checkbox"/> Nurse <input type="checkbox"/> Phys. Assist <input type="checkbox"/> MD/DO <input type="checkbox"/> Other: _____	<input type="checkbox"/> Paramedic <input type="checkbox"/> EMT-I <input type="checkbox"/> Medic Student <input type="checkbox"/> Nurse <input type="checkbox"/> Phys. Assist <input type="checkbox"/> MD/DO <input type="checkbox"/> Other: _____

7. Indicate drugs given to facilitate intubation

- Atropine _____ mg
- Diazepam _____ mg
- Etomidate _____ mg
- Lidocaine _____ mg
- Midazolam _____ mg
- Morphine _____ mg
- Succinylcholine _____ mg
- Topical Anesthetic Spray
- Other-Specify _____ - _____ mg
- Other-Specify _____ - _____ mg

8. Times and Vital Signs

	Time	Heart Rate	Resp. Rate	Blood Pressure	Pulse Oximetry	ECTO ₂
Decision to Perform Airway Procedure	:					
Pre-Airway Procedure Value	:			/		
Lowest Value During Airway Procedure	:			/		
Highest Value During Airway Procedure	:			/		
Successful Airway Obtained	:					
Post-Airway Procedure Value	:			/		
Airway Procedure Abandoned Unsuccessfully	:					

North Carolina EMS Airway Evaluation Form

9. Provide information for each laryngoscopy attempt.

Attempt	ETI Method	Rescuer	Attempt Successful?
1	<input type="checkbox"/> Oral <input type="checkbox"/> Nasal <input type="checkbox"/> Sedation <input type="checkbox"/> RSI	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C	<input type="checkbox"/> Yes <input type="checkbox"/> No
2	<input type="checkbox"/> Oral <input type="checkbox"/> Nasal <input type="checkbox"/> Sedation <input type="checkbox"/> RSI	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C	<input type="checkbox"/> Yes <input type="checkbox"/> No
3	<input type="checkbox"/> Oral <input type="checkbox"/> Nasal <input type="checkbox"/> Sedation <input type="checkbox"/> RSI	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C	<input type="checkbox"/> Yes <input type="checkbox"/> No
4	<input type="checkbox"/> Oral <input type="checkbox"/> Nasal <input type="checkbox"/> Sedation <input type="checkbox"/> RSI	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C	<input type="checkbox"/> Yes <input type="checkbox"/> No

FOR ORAL ROUTE:
Each Insertion of Blade (Laryngoscope) is one "Attempt"

FOR NASAL ROUTE:
Each Pass of Tube Past the Nares is One "Attempt"

10. Endotracheal tube confirmation

	Tracheal Placement	Esophageal Placement	Indeterminate	Not Assessed	Tube Not Placed
Auscultation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bulb/Syringe Aspiration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Colorimetric ETCO ₂	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Digital ETCO ₂	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waveform ETCO ₂	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Who determined the final placement (location) of ET Tube?

- Rescuer performing intubation
- Another rescuer on the same team
- Receiving helicopter/EMS crew
- Receiving hospital team
- Other: _____

12. Was ETI successful for the overall encounter (on transfer of care to ED or helicopter)?

- Yes No

13. If all intubation attempts FAILED, indicate suspected reasons for failed intubation (Check all that apply)

- Inadequate patient relaxation
- Orofacial Trauma
- Inability to expose vocal cords
- Secretions/blood/vomit
- Difficult patient anatomy
- Unable to access patient
- ETI attempted, but arrived at destination facility before accomplished
- Not Applicable – Successful field ETI
- Other _____

14. Critical complications encountered during airway management (Check all that apply)

- Failed intubation effort
- Injury or trauma to patient from airway management effort
- Adverse event from facilitating drugs
- Esophageal intubation – delayed detection (after tube secured)
- Esophageal intubation – detected in ED
- Tube dislodged during transport/patient care
- Tube was not in the correct position when assumed care of the patient
- Other: _____

15. If all intubation attempts FAILED, indicate secondary (rescue) airway technique used (Check all that apply)

- Bag-Valve-Mask (BVM) Ventilation
- Needle/Jet Ventilation
- Combitube
- Open Cricothyroidotomy
- Not Applicable – Successful field ETI
- King LT-D
- Other _____

16. Did secondary (rescue) airway result in satisfactory ventilation?

- Yes No Not Applicable

18. Endotracheal tube placement

- 34. Size (mm) _____ Unknown
- 35. Depth (cm, at lateral corner of mouth) _____ Unknown
- 36. Secured with: Adhesive tape Umbilical/cloth tape Tube holder Other Unknown
- 37. Placement reassessed after patient movement Yes No Unknown
- 38. Placement reassessed after patient transfer of care Yes No Unknown

19. Signature of Receiving Physician/Healthcare Provider (Confirming Destination/Transfer Tube Placement)

20. Signature of EMS Medical Director (Confirming Review of Completed Form)

Date and Time: _____ : _____ am/pm

Date: _____