



## San Benito County Emergency Medical Services Agency

### ADVANCED AIRWAY MANAGEMENT

Policy : 5000  
Effective : July 1, 2010  
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The following procedures are to be used in the care of patients for whom airway management is indicated. The equipment and procedures listed are provided to be a guideline for managing airways in patients. Also listed are documentation standards that are to be utilized when charting these procedures.

#### Endotracheal Intubation (ETI)

Authority for this policy is noted in the California Administrative Code, T22, Div 9, Section 100145 (a) 1 (C). This policy outlines the criteria for use of this selected procedure in San Benito County.

#### **I. Indications For Endotracheal Intubation**

Placement of an oral endotracheal tube in the adult or pediatric patient is a **STANDING ORDER** for paramedics and may be done prior to the establishment of contact with the Base Hospital according to the following indications:

1. Cardiac Arrest
2. Respiratory Arrest
3. Severe respiratory failure with impending respiratory arrest
4. Unstable airway or impending airway obstruction

#### **II. Use of Versed**

Versed may be used as an adjunct to intubation in those patients who are in need of advanced airway management, but are unable to be managed due to combativeness, clenching, trismus, etc. In these cases, Versed is a **STANDING ORDER** and may be used without first contacting the Base Hospital. Nevertheless, in **ALL CASES** where Versed is used, early notification of the Base Hospital is advised. If unable to manage a patient's airway after initial dose of Versed, consider Base Hospital contact for subsequent doses. Maximum initial dose 5mg IVP/IO or 10mg IM. Pediatric dosing is 0.1mg/kg IVP/IO or 0.2mg/kg IM with a maximum initial dose of 3mg.

### III. Notes

- \* No more than three (3) intubation attempts per patient.
- \* No more than 15 seconds is allowed for an intubation attempt. If endotracheal intubation is unsuccessful after 15 seconds, either ventilate or perform CPR before next attempt.
- \* If a patient should regain consciousness while intubated, extubate if such treatment is deemed medically safe and appropriate. Contact Base Hospital for chemical restraint if needed.
- \* NASOTRACHEAL intubation is NOT authorized and will not be performed.
- \* Placement of a c-spine immobilization collar is required on all patients who have been intubated.

### IV. Definitions of Intubation Procedure

\* **ATTEMPT:** An ETI attempt is when you have placed the tip of the endotracheal tube (ETT) past the plane of the teeth. Until such time as the tip of the ETT has passed the plane of the teeth there has been no attempt made. Once an attempt is made it must be documented as SUCCESSFUL ("S") or UNSUCCESSFUL ("U"). An *examination* of the airway is NOT an attempt. In most cases it is simply an examination or in some cases a useful method of assisting with suctioning of the airway.

\* **SUCCESSFUL- "S":** A successful ETI is one in which you witness:

- 1) The ETT pass through the vocal cords.
- 2) No abdominal or epigastric sounds &
- 3) Good bilateral lung sounds.

You must document why your ETI is successful. An example of this would be "ETI successful after seeing the ETT pass through the vocal chords, confirmed with good bilateral lung sounds and end-tidal CO2 device applied." *In all cases of ETI, documentation of end-tidal CO2 use is mandated.*

\* **UNSUCCESSFUL- "U":** An unsuccessful ETI attempt is when you are unable to place the ETT. Common reasons for inability to intubate include:

- 1) Inability to visualize landmarks.
- 2) Intubation attempt exceeds 15 second time limit.

You must document why your ETI was unsuccessful. An example of this would be: "unable to visualize cords secondary to: emesis; negative end-tidal CO2 confirmation; clenched teeth, or esophageal placement."

## V. Principles Regarding Confirmation of ET Placement

The American College of Emergency Physicians endorses the following principles regarding the confirmation of ETT placement in the Emergency Department or in the out-of-hospital setting.

- During intubation, direct visualization of the ETT passing through the vocal cords into the trachea constitutes firm evidence of correct tube placement, but should be verified with additional techniques.
- Verification of ETT placement should be completed in all intubated patients, and reconfirmation of ETT position should be done in all patients when their clinical status changes, or when there is any concern about proper tube placement.
- Standard physical examination methods, such as auscultation of lungs and epigastrium, visualization of chest movement, and fogging in the tube, are not sufficiently reliable to exclude esophageal intubation in all situations.
- Verification techniques include capnometry, esophageal detection devices, and revisualization with direct laryngoscopy.
- End-tidal CO<sub>2</sub> detection, qualitative, quantitative, or continuous, is the most accurate and easily available method to monitor correct endotracheal tube position in patients who have adequate tissue perfusion. ***End-tidal CO<sub>2</sub> detection, qualitative, quantitative, or continuous, will be used to monitor adequate ventilation in all patients who have been intubated.***
- Pulse oximetry and esophageal detector devices are not as reliable as end-tidal CO<sub>2</sub> devices in patients who have adequate tissue perfusion.
- For patients in cardiac arrest, and for those with markedly decreased perfusion, when end-tidal CO<sub>2</sub> does not confirm tracheal intubation, other methods of confirmation, such as direct visualization, should be performed.
- Placement of a c-spine immobilization collar on all patients who have been intubated is required in instances where the collar fits correctly.

## VI. Documentation

All attempts to intubate (successful or unsuccessful placement) will be reported on the Prehospital Care Report (PCR). The PCR must also include the use of CO<sub>2</sub> end-tidal monitoring device.

## VII. Skill Maintenance

Maintaining a high level of ETI skill proficiency is a priority in San Benito County's CQI Program. Periodic reviews of paramedic intubations are ongoing and include documentation of ETI attempts and successes. Annual manikin training may be required to maintain County accreditation.

## King Laryngeal Tube (LTD)

### I. **Indications for an LTD.**

The LTD is to be used in instances where endotracheal intubation is indicated, but cannot be performed successfully in a timely fashion. Placement of an LTD in an adult or large (4 feet or taller) pediatric patient is a STANDING ORDER for paramedics. It may be done prior to establishing contact with the Base Hospital according to the following indications:

- 1 Cardiac Arrest
2. Respiratory Arrest
3. Severe respiratory failure with impending respiratory arrest
4. Unstable airway or impending airway obstruction

### II. **Use of Versed**

Versed may be used as an adjunct to LTD placement in those patients who are in need of advanced airway management, but are unable to be managed due to combativeness, clenching, trismus, etc. In these cases, Versed is a STANDING ORDER and may be used without first contacting the Base Hospital. Nevertheless, in ALL CASES where Versed is used, early notification of the Base Hospital is advised. If unable to manage a patient's airway after initial dose of Versed, consider Base Hospital contact for subsequent doses. The maximum initial dose 5mg IVP/IO or 10mg IM. Pediatric dosing is 0.1mg/kg IVP/IO or 0.2mg/kg IM with a maximum initial dose of 3mg.

### III. **Notes**

- Use of oxygen powered ventilation devices to ventilate patients who are being ventilated with an LTD is EXPRESSLY PROHIBITED.
- All patients being ventilated with an LTD should have a c-collar placed.
- Placement of the LTD shall follow all approved County procedural steps.
- The LTD may be placed initially, even without an actual endotracheal attempt, if the paramedic deems this the timeliest way to manage the patient's airway.
- ***End-tidal CO2 detection, qualitative, quantitative, or continuous, will be used to monitor adequate ventilation in all patients who have had an LTD placed.***

### IV. **Documentation**

All attempts to place a LTD will be reported on the Prehospital Care Report (PCR). The PCR must also include the use of the CO2 end-tidal monitoring device and C-collar.

### V. **Skill Maintenance**

LTD skill maintenance will be insured by periodic audits and regular training reviews.