County of Santa Cruz

HEALTH SERVICES AGENCY

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EMERGENCY MEDICAL SERVICES PROGRAM

Policy No. 5000
April 15, 2014

Emergency Medical Services Program

Approved

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Medical Director

Subject: ADVANCED AIRWAY MANAGEMENT

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 as 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 Santa Cruz 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.

* Intubation of cardiac arrest patients should be performed during continuous compression. For patients with pulses, no more than 15 seconds is allowed for an intubation attempt. If endotracheal intubation is unsuccessful after 15 seconds, ventilate 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 place the tip of the endotracheal tube (ETT) past the plane of the patient's 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 in the PCR 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) Upon ventilation no abdominal or epigastric sounds are heard, and
3) Upon auscultation, bilateral breath sounds are heard.

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 Successful Placement and Confirmation of ET Placement

Any four of the following airway verification checks will be reviewed prior to, and checked after all intubation attempts. **These checks will be used in conjunction with waveform capnography, which is mandated on all intubated patients**.

Manual checks:

1. Visualizing the tube passing through the patient's vocal cords.
2. Noting tube condensation or fog with ventilation.

3. Noting chest rise and fall with ventilation.
4. Noting the presence of breath sounds bilaterally.
5. Noting the absence of gastric sounds with ventilation.
6. Use of an esophageal detection device.

- 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.

- Pulse oximetry and esophageal detector devices are not as reliable as end-tidal CO2 devices in patients who have adequate tissue perfusion.

- 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 PCR. The PCR must also include documentation of the manual checks listed above, along with waveform capnographic readings.

VII. Skill Maintenance

Maintaining a high level of ETI skill proficiency is a priority in Santa Cruz 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 pediatric patient is a STANDING ORDER for EMTs and medics trained in its use. 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 (Paramedics only)

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, Base Hospital contact is required 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. Principles Regarding Successful Placement and Confirmation of LTD Placement

The following four airway verification checks will be reviewed prior to, and checked after all LTD placement attempts. **These checks will be used in conjunction with waveform capnography, which is mandated on all patients in whom an LTD is placed.**

Manual checks:

1. Noting tube condensation or fog with ventilation
2. Noting chest rise and fall with ventilation
3. Noting the presence of breath sounds bilaterally
4. Noting the absence of gastric sounds with ventilation

- Reconfirmation of LTD position should be done in all patients when clinical status changes, or when there is any concern about proper tube placement.

- Pulse oximetry is not as reliable as end-tidal CO2 devices in patients who have adequate tissue perfusion.

- Placement of a c-spine immobilization collar on all patients who have been intubated is required in instances where the collar fits correctly.

IV. Notes

- Use of oxygen powered ventilation devices to ventilate patients is EXPRESSLY PROHIBITED.

- 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 is the timeliest way to manage the patient's airway.

V. Documentation

All attempts to place an LTD will be reported on the PCR. The PCR must also include documentation of the manual checks listed above, along with waveform capnographic readings.

VI. Skill Maintenance

Periodic audits and regular training reviews will insure LTD skill maintenance.