SIERRA-SACRAMENTO VALLEY EMS AGENCY
PROGRAM POLICY

REFERENCE NO. 1104

SUBJECT: ADVANCED AIRWAY MANAGEMENT

PURPOSE:

To establish minimum guidelines, procedures and requirements for the use of advanced airway procedures in critical patients in the S-SV EMS Region.

AUTHORITY:

Health and Safety Code 1797.220 and 1798

California Code of Regulations, Title 22, Division 9

POLICY:

A. The S-SV EMS approved advanced airway management procedures for adult patients consist of the following:

1. Endotracheal Intubation
2. Nasotracheal Intubation
3. Insertion of an esophageal-tracheal double-lumen airway (ETDLA)
4. Insertion of a King Airway device

B. The preferred method of airway management for the pediatric patient ≤ 14 years of age is Bag-Valve-Mask (BVM) ventilation. Intubation in this age group should be performed **only** if BVM is unsuccessful or impossible (see General Pediatric Protocol #P-1)

C. ALS (Paramedic) personnel are authorized to perform any of the advanced airway skills listed in this policy.

D. LALS (Advanced EMT) personnel are authorized to perform the skill of insertion of an ETDLA or King Airway device only. LALS personnel may not intubate.

E. BLS personnel are authorized to perform the skill of insertion of an ETDLA or King Airway device **only** if their provider has been authorized by the S-SV EMS Agency as an approved EMT optional skills provider and they have successfully completed an approved training program. BLS personnel may not intubate.

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S-SV EMS Medical Director	**S-SV EMS Regional Executive Director**

F. Defer advanced airway insertion rather than interrupt chest compressions in the cardiac arrest patient.

G. ALS / LALS and BLS personnel must confirm correct advanced airway placement with physical assessment (auscultation, observation of chest rise, visualization of the tube passing through the cords, etc.) in addition to one or more of the following methods:

1. Waveform Capnography (Preferred)
2. Esophageal Detection Device (EDD) **and** Capnometer
3. Esophageal Detection Device (EDD) **and** Colorimetric end-tidal CO_2 detector device

H. ALS / LALS personnel must re-confirm correct advanced airway placement utilizing the methods listed above on any patient where the airway has been established by a BLS provider. ALS / LALS personnel assume responsibility for the advanced airway once they have arrived on scene and established patient care.

I. An ALS / LALS provider who establishes an advanced airway shall accompany the patient to the hospital if the patient is transported. This does not apply to multiple patient incidents or when patient care is appropriately transferred to another ALS / LALS provider (Air Ambulance, Air Rescue). In these cases, the receiving ALS / LALS provider must re-confirm correct advanced airway placement immediately upon transfer of patient care.

J. Advanced airway placement must be re-confirmed by the EMT, Advanced EMT, or Paramedic utilizing the methods listed above, any time there is concern about the patency of the airway or any time there is a movement of the patient; including but not limited to:

1. Movement of the patient onto the ambulance gurney
2. Movement of the patient into or out of the ambulance
3. Movement of the patient from the ambulance gurney to the hospital gurney when able.

If the advanced airway is determined to no longer be patent during a re-confirmation assessment, appropriate measures must be immediately taken to re-establish the patency of the airway. This may include removal of the advanced airway and the utilization of BLS airway measures until the advanced airway can be appropriately re-established. The paramedic shall confirm that the advanced airway remains patent when the patient is transferred from the ambulance gurney to the hospital gurney and any concerns must be reported immediately to the receiving ED physician.

PROCEDURE:

A. Indications:

1. Patients who require assisted ventilation and meet the following criteria:

    a. Cardiac arrest
    b. Respiratory arrest or severe compromise AND unable to adequately ventilate with BVM

B. Endotracheal Intubation – (ALS – Paramedic personnel only):

1. An intubation attempt is defined as the introduction of an endotracheal tube past the patient's teeth.

2. Make no more than 2 total attempts per patient at placing the endotracheal tube. Each attempt should not last longer than 30 seconds. Ventilate with 100% oxygen for a minimum of one minute prior to each attempt. If endotracheal intubation is unsuccessful; an ETDLA or King Airway Device shall be utilized if an advanced airway remains necessary.

3. Pediatric intubation should be performed **only** if BVM ventilation is unsuccessful or impossible (see General Pediatric Protocol #P-1)

C. Esophageal-Tracheal Double-Lumen Airway (ETDLA) Device (Combitube®) or King Airway Device:

1. An ETDLA or King Airway device may be placed as a primary airway or after unsuccessful attempt(s) at endotracheal intubation

2. The ETDLA comes in two sizes:

    a. Small Adult 37 fr. – Patient between 4 and 5 feet tall
    b. Adult 41 fr. – Patient over 5 feet tall

3. The King Airway comes in three sizes:

    a. Size 3 – Patient between 4 and 5 feet tall
    b. Size 4 – Patient between 5 and 6 feet tall
    c. Size 5 – Patient over 6 feet tall

4. The ETDLA and King Airway devices are not to be used in patients < 4 feet tall.

D. Confirm Advanced Airway Placement:

1. If waveform capnography is not available, use an approved bulb-type esophageal detection device (EDD) prior to ventilating through the tube. Squeeze the bulb, apply to end of tube, and release the bulb. If the tube properly placed, the bulb should fully inflate in ≤ 5 seconds. Remove the bulb and begin ventilation.

2. Auscultate both lung fields for breath sounds, confirm chest rise with ventilation. Listen over left upper quadrant of the abdomen for air in the stomach.

3. Attach an approved end-tidal CO_2 detector (colorimetric device), capnometer or waveform capnography unit, that must remain in place until arrival at the hospital, **Waveform Capnography is preferred and must be used if available.**

4. All devices used to confirm advanced airway placement must be documented on the PCR (EDD, $ETCO_2$ – colorimetric or capnography)

5. If there is any doubt as to the proper placement of the endotracheal tube, visualize the pharynx and vocal cords with laryngoscope and use capnography. If still in doubt, suction the patient, deflate the cuff and remove the endotracheal tube

E. If the patient regains consciousness while intubated, do not extubate. Use restraints as necessary to prevent uncontrolled extubation. Consider sedation – Base / Modified Base Physician order only.

CROSS REFERENCES:

Policy and Procedure Manual

EMT Scope of Practice, Reference No. 801

Advanced EMT Scope of Practice, Reference No. 802

Paramedic Scope of Practice, Reference No. 803

Pulseless Arrest, Reference No. C-1

Airway Obstruction, Reference No. R-1

Respiratory Arrest, Reference No. R-2

Shock / Non-Traumatic Hpovolemia, Reference No. M-2

Ingestions and Overdoses, Reference No. M-5

Altered Level of Consciousness. Reference No. N-1

General Trauma Management, Reference No. T-1

Burns: Thermal & Electrical, Reference No. T-10

General Pediatric Protocol, Reference No. P-1

King Airway Device, Reference No. 1102