



**Department of Public Health
Emergency Medical Services Agency**

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Policy #: 552.10
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This policy supersedes any other existing policy on this subject.

Subject: **PEDIATRIC ORAL ENDOTRACHEAL INTUBATION**

Authority: California Health and Safety Code, Division 2.5, Sections 1797.220 and 1798., and the California Code of Regulations, Title 22, Division 9, Section 100145.

Purpose: To provide for guidelines in the proper utilization and performance of advanced airway management of pediatric (less than 15 years of age) patients.

Policy: Field personnel shall use the guidelines contained herein in the management of pediatric patients presenting with respiratory distress.

1. Background

Pediatric Cardiopulmonary Failure is rarely a sudden event, but rather is usually the end-result of a progressive deterioration in respiratory, and in the later stages, circulatory function. It is therefore imperative that field personnel provide a thorough assessment of the child's respiratory function. **Early Assessment and Early Aggressive Intervention** is the key to effective intervention in preventable cardiopulmonary failure and arrest in children.

2. Assessment

Cardiopulmonary failure/arrest should be anticipated in children presenting with any of the following:

- A. Tachypnea (relative to age)
- B. Bradypnea (particularly ominous)

APPROVED:

ON-FILE

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- C. Diminished level of consciousness or response to pain:
 - 1) Difficult to arouse, lethargy.
 - 2) Child > two months fails to recognize parents (often described by parents as simply "something wrong").

- D. Cyanosis (a late and inconsistent sign):
 - 1) If present in mucous membranes of mouth or nailbeds, usually a respiratory component.
 - 2) If present only in extremities, usually circulatory failure.

- E. Poor skeletal muscle tone.

- F.* Increased respiratory effort:
 - 1. Nasal flaring.
 - 2. intercostal, subcostal and/or suprasternal inspiratory retractions.
 - 3. Head bobbing, grunting, stridor or prolonged expiration.

*note - **Fatigue must be considered.** An infant with tachypnea will tire. A decreasing respiratory rate under these circumstances is an ominous sign.

3. Indications for Intubation

It must be emphasized that proper and early use of high concentration O₂ can often times resolve respiratory distress in children. In cases of inadequate ventilatory rate or volume, a BVM device with 100% O₂ is, in most cases, adequate to provide the necessary ventilatory assistance. The following should be used to guide the Paramedic in determining the need to perform pediatric endotracheal intubation:

- A. Cardiopulmonary arrest.

- B. Whenever airway protection is indicated.

- C. Failure to improve the patient's condition despite assisted ventilations with BVM (e.g. inability to affect a mask seal).

5. Complications

- A. Esophageal Intubation
- B. Right Mainstem Bronchus Intubation
- C. Laryngeal and/or oral/dental trauma

In cases of suspected spinal cord injury, the patients head should be maintained in a neutral position, with an assistant securing the head and neck during intubation.

Procedure:

1. Ensure adequate ventilation with 100% O₂ via BVM and appropriate mask size.
2. Choose an appropriate ET tube size.
3. Place the child in a supine "sniffing" position, do not hyperextend the neck.
4. Enter the oralpharynx (preferably with a straight blade) from the right side of the mouth and "sweep" the tongue to the left.
 - A. Keep in mind that the pediatric glottis is elevated, relative to the adult anatomy.
 - B. If difficulty is encountered in visualizing the larynx, pull back slightly and "track" along the length of the tongue to its base, and visualization should be effected.
5. Each attempt shall not exceed 30 seconds. The patient's cardiac rhythm must be monitored, and if the patient becomes bradycardic, the attempt should be suspended and the patient hyperventilated with 100% O₂ via BVM.
6. Do not attempt "Blind" intubation. If unable to visualize the larynx, transportation should be initiated, and ventilation effected with BVM.
7. Once the ET tube is placed through the vocal cords into the trachea, confirmation of proper placement shall be instituted as follows:
 - A. Placement of an end-tidal CO₂ detector with positive color change noted.
 - B. Confirm the absence of air movement or "gurgling" over the epigastrium during ventilation.

- C. Confirm equal breath sounds via auscultation of at least two locations over each lung, preferably one bronchial and one vesicular location on each side.
 - D. Confirm equal chest rise, and observe for abdominal distention frequently.
8. Unless the paramedic is absolutely secure with the proper placement of the ET Tube as described above, the patient shall be extubated and hyperventilated with 100% O₂ via BVM for at least one minute prior to any re-attempt.
 9. The tube should be secured with tape or a prepackaged ET tube holder.
 10. Frequent re-assessment should be performed (each time the patient is moved or the tube or bag handled), to include assessment of skin and mucous membranes, to ensure that no displacement has occurred.