Supraglottic Airway		6091B
	Effective 7/1/2023	**Expires** 6/30/2026
Low Frequency **Supraglottic Airway**	Approval: Medical Director **John Beuerle, MD**	Signed
Applies To: **Paramedics**	Approval: EMS Director **Teresa Rios**	Signed

Performance Objective

Secure placement of a supraglottic airway to facilitate positive pressure ventilation.

Before performing insertion of a supraglottic, paramedics must:

1. Determine BLS airway adjuncts are inadequate for effective positive pressure ventilation (PPV) and confirm the need for ALS airway placement.
2. Recognize signs of a difficult airway and select, prepare and employ the appropriate supraglottic airway and techniques.
    a. A difficult airway is defined as the presence of anatomic conditions which preclude direct visualization of the patient's glottic opening (e.g. airway edema, arthritis, scoliosis of the spine, significant overbite, small mandible, short neck, morbid obesity, cervical spine immobilization, face or neck trauma).
3. Correctly assemble all equipment required for supraglottic airway insertion within 60 seconds.
4. Ensure optimal ventilation and oxygenation of the patient while supraglottic airway equipment is prepared.

While performing insertion of a supraglottic airway, paramedics must:

1. Minimize oral trauma during insertion by utilizing correct technique.
2. Place the appropriately sized supraglottic airway securely per the manufacturer's instructions in the hypopharynx at the correct depth within 30 seconds.
3. Immediately re-establish PPV with the appropriate rate and tidal volume (minute volume) and oxygen at 10 – 15 LPM following supraglottic airway placement.
4. Confirm correct placement:
    a. IMMEDIATELY attach waveform capnography and commence gentle bagging while confirming proper airway placement.
    b. Confirm appropriate rectangular waveform is present.
    c. Auscultate lung fields and epigastrium.
    d. Print strip of capnogram and retain for documentation.
    e. Observe for appropriate chest rise and fall.
5. Secure the supraglottic airway at the correct depth per the manufacturer's directions.
6. Stabilize the patient's airway and prevent tube migration by using a device to prevent rotation, flexion, or extension of patient's head.
7. Efficiently employ post supraglottic airway diagnostic tools to thoroughly assess overall effectiveness of ventilatory support throughout the duration of respiratory management efforts, including:
    a. Visualization of symmetrical rise and fall of the chest with PPV.
    b. Monitor pulse oximetry - the target Sp02 is greater than 95% if spontaneous circulation is present.

    c. Monitor ETC02 for appropriate waveform morphology and target C02 levels.
        1) The target range for ETC02 level is between 30 – 45 mmHg if spontaneous circulation is present.
        2) In cardiac arrest, metabolic derangements will significantly alter ETC02 values and waveform morphology. Target range for ETC02 level is between 15 mmHg – 45 mmHg during CPR.

3) Recognize that in a patient with traumatic brain injury, ETC02 less than 35 mmHg due to hyperventilation may actually cause harm. Minute volume should be adjusted accordingly while maintaining optimal oxygenation, reserving hyperventilation for those patients showing signs of cerebral herniation only.[1]

d. Monitor ECG for dysrhythmias due to vagal stimulation or other treatable causes.
e. Frequent auscultation of lung fields and epigastrium.
f. Constant evaluation of ventilatory compliance and resistance during PPV.

8. Re-implement effective PPV within 10 seconds following unsuccessful supraglottic airway placement attempts.
    a. Rapidly transport patients to closest Emergency Department when supraglottic airway placement is unsuccessful and airway patency is not secure.
9. Immediately identify malfunctioning equipment, ineffective techniques or changes in post placement PPV compliance and employ alternative measures to achieve effective ventilations.
10. Reassess supraglottic airway placement each time the patient is moved and before transfer of care to hospital staff.
    a. Record and print the waveform ETC02 strip prior to transfer of care to the hospital staff and attach the strip to the completed PCR.
11. Provide direction to personnel that have been delegated management of post-supraglottic airway PPV.
12. Maintain effective ventilation and oxygenation throughout the entire prehospital treatment period.
13. Maintain calm, and effectively lead a team-based approach to resuscitation under all conditions.
14. Accurately document all assessment findings, therapeutic treatments and the patient's response to therapy.

Critical Success Targets for use of a Supraglottic Airway

1. Supraglottic airway securely placed in the patient's hypopharynx followed by effective PPV
2. Chest rise and fall with each ventilation cycle
3. Ventilatory rate and tidal volume (minute volume) appropriate for patient condition and response
4. Sp02 of greater than 95% in patients with spontaneous circulation
5. Limited interruption of PPV (30 seconds maximum)
6. Evaluation and Documentation of ETC02 morphology and values.

System Benchmark

Supraglottic airway securely placed in patient's airway within 2 attempts in 98% of the indicated patients.

Core Competency Requirements to be covered during education/ training on Supraglottic Airway

1. Respiratory A&P and pathophysiology
2. Assessment of airway and breathing
3. Techniques for PPV
4. Airway pressure secondary to PPV – mean versus peak
5. Possible complications of PPV - gastric, pulmonary, cerebral, and cardiovascular complications of over-inflation and over-ventilation
6. Determination of PPV adequacy and efficacy. Note that greater tidal volume may be necessary due to greater dead space in use of supraglottic airways.
7. Differentiation between effective and ineffective patient response to PPV via BLS measures
8. Indications for use of a supraglottic airway
9. Selection of correct equipment required for insertion of a supraglottic airway
10. Identification of the difficult airway and employment of alternative techniques for airway management
11. Supraglottic airway placement techniques
12. Post-placement airway monitoring
13. Auscultation and diagnostic differentiation of lung sounds
14. Use of diagnostic tools, e.g., capnography
15. Recognition of complications (**D**islodgement, **O**bstruction, **P**neumothorax, **E**quipment Failure, or **DOPE**)

[1] The Brain Trauma Foundation's Guidelines for Prehospital Management of Severe Traumatic Brain Injury, Fourth Edition, Section V

16. Team Leadership and patient safety
17. Documentation

Equipment Requirements

1. Personal protective equipment
2. Adult airway mannequin
3. NP / O airways
4. BVM
5. Supraglottic airway(s)
6. Stethoscope
7. Supplemental oxygen
8. Pulse oximeter
9. Waveform capnography
10. Suction device (both rigid and flexible catheters)
11. Cardiac monitor

Instructor Resource Materials

1. Prehospital Trauma Life Support, 8th Edition
2. AHA CPR and BLS Provider Manual
3. AHA ACLS Provider Manual
4. AHA PALS Provider Manual
5. Current AHA Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care
6. NHTSA EMS Educational Instructor Guidelines for EMT and Paramedic
7. Adjunct specific manufacturer guidelines for use

Supraglottic Airway

Successful (y/n)	Performance Steps	Additional Information
	Take or verbalize appropriate body substance isolation precautions	Selection: gloves, goggles, mask, gown, booties, P100 PRN
	Determine BLS airway adjuncts are inadequate for effective positive pressure ventilation (PPV) and confirm the need for ALS airway placement.	
	Recognize signs of a difficult airway and select, prepare and employ the appropriate supraglottic airway and techniques. *	• A difficult airway is defined as the presence of anatomic conditions which preclude direct visualization of the patient's glottic opening. • Signs of a difficult airway include, but are not limited to: ○ Airway edema ○ Arthritis or scoliosis of the spine ○ Significant overbite ○ Small mandible ○ Short neck ○ Morbid obesity ○ Cervical spine immobilization ○ Face or neck trauma
	Correctly assemble all equipment required for supraglottic airway insertion within 60 seconds. *	Suction, suction catheters (flexible and rigid), stethoscope, supraglottic airways, waveform capnography, pulse oximeter, BVM
	Ensure optimal ventilation and oxygenation of the patient while supraglottic airway equipment is prepared. *	

While performing insertion of a supraglottic airway, the paramedic must:

	Minimize oral trauma during insertion by utilizing correct technique. *	
	Place the appropriately sized supraglottic airway securely per the manufacturer's instructions in the hypopharynx at the correct depth within 30 seconds. *	
	Immediately re-establish PPV with the appropriate rate, tidal volume (minute volume), and oxygen at 10 – 15 LPM following supraglottic airway placement. *	
	Confirm correct placement. *	• IMMEDIATELY attach waveform capnography and commence gentle bagging while confirming proper

		airway placement. • Confirm appropriate rectangular waveform is present • Auscultate lung field and epigastrium • Print strip of capnogram and retain for documentation • Observe for appropriate chest rise and fall
	Secure the supraglottic airway at the correct depth. *	Per manufacturer's instructions
	Stabilize the patient's head to avoid movement and possible supraglottic airway dislodgement.	Stabilize patient's airway and prevent tube migration by using a device to prevent rotation, flexion, or extension of patient's head.

	Efficiently employ post-supraglottic airway diagnostic tools to thoroughly assess overall effectiveness of ventilator support throughout the duration of respiratory management efforts. *	• Visualize symmetrical rise and fall of the chest with PPV
		• Monitor pulse oximetry - the target is greater than 95% if spontaneous circulation is present.
		  o The target range is ETC02 level between 30 – 45 mmHg if spontaneous circulation is present.
		  o In cardiac arrest, metabolic derangements will significantly alter ETC02 values and waveform morphology. Target range for ETC02 level is between 15 mmHg – 45 mmHg during CPR.
		  o Recognize that in a patient with traumatic brain injury, ETC02 less than 35 mmHg due to hyperventilation may actually cause harm. Minute volume should be adjusted accordingly while maintaining optimal oxygenation, reserving hyperventilation for those patients showing signs of cerebral herniation only.
		• Monitor ECG for dysrhythmia due to vagal stimulation or other treatable causes.
		• Frequent auscultation of lung fields and epigastrium
		• Constant evaluation of ventilator compliance and resistance during PPV.

	Re-implement effective PPV within 10 seconds following unsuccessful placement attempts. *	Rapidly transport patients to the closest most appropriate hospital when supraglottic airway placement is unsuccessful and airway patency is not secure.
	Immediately identify malfunctioning equipment, ineffective techniques or changes in post-placement PPV compliance/ resistance and employ alternative measures to achieve effective ventilations. *	
	Reassess supraglottic airway placement each time the patient is moved and before transfer of care to hospital staff. *	Record and print the waveform ETC02 strip prior to transfer of care to the hospital staff and attach the recording strip to the completed PCR.
	Maintain effective ventilation and oxygenation throughout the entire pre-hospital treatment period. *	Target Sp02 is greater than 95%; target ETC02 is 30 – 45 mmHg in a patient with spontaneous circulation.
	Maintain calm, and effectively lead a team-based approach to resuscitation under all conditions	
	Accurately document all assessment findings, therapeutic treatments and	

	the patient's response to therapy.	

Critical Failure Criteria

____Failure to take or verbalize BSI appropriate to the skill prior to performing the skill
____Failure to initiate ventilations within 30 seconds after applying gloves or interrupts ventilations for greater than 30 seconds.
____Failure to ventilate patient at a rate appropriate to patient age
____Failure to provide adequate tidal volume per breath
____Failure to pre-oxygenate patient prior to placement of supraglottic airway
____Failure to successfully place supraglottic airway within 2 attempts
____Failure to disconnect syringe immediately after inflating cuff of supraglottic airway
____Failure to assure proper placement by auscultation over lung fields and epigastrium
____Failure to use waveform capnography
____Failure to re-check placement after each patient movement and before transfer of care to hospital staff
____Any procedure that would have harmed the patient