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**EMS SKILL**

**AIRWAY EMERGENCY / AIRWAY MANAGEMENT**

**NASOPHARYNGEAL AIRWAY (NPA)**

**PERFORMANCE OBJECTIVES**

Demonstrate competency in sizing, inserting, and removing a nasopharyngeal airway.

**CONDITION**

Insert a nasopharyngeal airway in a simulated adult or child who is breathing and has a gag reflex, but has difficulty maintaining a patent airway. Necessary equipment will be adjacent to the manikin or brought to the field setting.

**EQUIPMENT**

Adult and pediatric airway manikin, various sizes of nasopharyngeal airways, silicone spray, water-soluble lubricant, goggles, masks, gown, gloves, pediatric resuscitation tape, and airway bag.

**PERFORMANCE CRITERIA**

• Items designated by a diamond (⧫) must be performed successfully to demonstrate skill competency.

• Items identified by double asterisks (\*\*) indicate actions that are required if indicated.

• Items identified by (§) are not skill component items, but should be practiced.

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| **INSERTION OF NASOPHARYNGEAL AIRWAY**  **PREPARATION** | |
| **Skill Component** | **Key Concepts** |
| ⧫ Establish body substance isolation precautions | • Mandatory personal protective equipment – gloves at all times  • Situational - goggles, masks, gown as needed |
| ⧫ State the indications for insertion of a nasopharyngeal  airway (NPA)   * Semiconscious or unresponsive with an intact gag   Reflex   * Semiconscious or unresponsive child who is < 12 months of age * Teeth are clenched and an oropharyngeal airway (OPA) cannot be inserted * Oral trauma when an OPA is contraindicated | * In most cases, the use of an NPA is better tolerated than an OPA. * An NPA is less likely to stimulate vomiting. * Even when inserted correctly, minor bleeding may occur. |
| ⧫ State the contraindication for the insertion of an NPA   * Less than 12 months of age | * Contraindicated in patients less than 12 months due to the small diameter of the nostrils and adenoidal tissue. * Evidence no longer supports that facial fractures and/or basilar skills fractures are a contraindication for the placement of an NPA |
| ⧫ Select the patient’s right nostril for NPA insertion  ***\*\*Switches to left nostril if unsuccessful in right nostril*** | • The patient’s right nostril is preferred since it is generally larger than the left.   * The right nostril should be is attempted first unless the left nostril is larger than the right or if there is a contraindication for using the right. However, whichever nostril is chosen for insertion should provide the same benefit or insertion. |
| ⧫ Select appropriate size nasopharyngeal airway by measuring the:  • Diameter - size of the patient’s nostril or tip of little finger  • Length – tip of the nose to the tip of the earlobe, tragus, or angle of the lower jaw | • The tragus is the small pointed prominence of the external ear that is situated in front of the ear canal.  • To ensure correct length:  - If the airway has an adjustable flange, use it to mark the length.  - If no adjustable flange is present, hold a finger at correct mark throughout insertion (depth point).   * The length of the NPA must be long enough to supply an air passage between the tongue and the posterior pharynx |

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| **Skill Component** | **Key Concepts** |
| ⧫ Lubricate with a water-soluble lubricant | • Only water soluble lubricants may be used. DO NOT use petroleum based lubricants. They may cause damage to the lining of the nasal cavity and the pharynx, thereby increasing the risk of infection and bronchial pneumonia.  • Lubrication minimizes resistance and decreases irritation to the nasal passage. |
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| **INSERTION OF THE NPA**  **PROCEDURE** | |
| **Skill Component** | **Key Concepts** |
| ⧫ Push the tip of the nose upward and maintain the head in a neutral position |  |
| ⧫ Hold the NPA in a “pencil-grip” fashion near the flange | • Holding the NPA in a “pencil-grip” provides the appropriate alignment for the insertion of the NPA. |
| ⧫ Insert the NPA with the bevel towards nasal septum | • The patient’s right nostril should be is attempted first unless the left nostril is larger than the right or if there is a contraindication for using the right.  • Placement of the NPA into the nares should not cause blanching of the nostril. If blanching occurs, the NPA is too large and a smaller diameter NPA must be used to prevent tissue necrosis.  • If resistance is met, a gentle back-and-forth rotation between the fingers will help guide the NPA into the nasopharynx. If resistance continues, withdraw the NPA, re-lubricate, and attempt to insert into the other nostril. |
| ⧫ Advance NPA by directing tip along floor of nasal cavity until the flange is seated outside of the nostril:  • Right nostril:  - Advance 2/3 of the measured length  - Continue to advance NPA until flange is seated against outside of nostril or marked area is reached  • Left nostril:  - Insert approximately 1" or until resistance is met  - Rotate 180O into position  - Advance 2/3 of the measured length  - Advance until flange is seated against outside of nostril or marked area is reached | • If resistance if felt, rotating the NPA 180O allows for the curvature of the NPA to conform to the natural curve of the nasal cavity.  • When NPA is in position, the tip is in the posterior pharynx and should prevent possible obstruction by the tongue if it falls back into the oropharynx. |
| ⧫ Confirm proper position of the NPA:  • Patient tolerates airway  • Feel at proximal end of airway for airflow on expiration  • Check nostril for blanching | • An NPA is usually well tolerated by conscious or semi-conscious patients who are having difficulty maintaining an airway.  • If the patient gags in the final stage of insertion, the airway is too long and the NPA needs to be withdrawn slightly.  • If nostril shows signs of blanching, the NPA is too large and a smaller diameter needs to be inserted. |
| ⧫ Reassess airway patency and breathing:  • Skin color  • Rise and fall of chest  • Upper airway sounds  ***\*\* Reposition head, check position of NPA, or suction - if indicated***  ***\*\* Administer oxygen via mask or ventilate with bag-mask ventilation (BMV) at appropriate rate*** *-* ***if indicated*** | • Upper airway sounds such as grunting, snoring, stridor, etc.  indicate a partial airway obstruction. When present, steps to relieve the partial obstruction must be taken.  • Suction or perform airway maneuvers to assure a patent airway, remove NPA if indicated and repeat ABCs and reconfirm size of NPA.  • Ventilate with BMV device at appropriate rate:  ~ Adult - 10-12/minute (every 5-6 seconds)  ~ Intubated adult 10/minute (1 breath every 6 seconds)    ~ Infant/Child - 12-20/minute (1 breath every 3-5 seconds)  ~ Neonate – 40-60/minute (every 1-2 seconds) |
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| **REMOVAL OF NASOPHARYNGEAL AIRWAY**  **PROCEDURE** | |
| **Skill Component** | **Key Concepts** |
| ⧫ Remove airway by grasping the flange and guiding the NPA out while directing the NPA down toward the chin  **\*\*Suction oropharynx - *if indicated***  ***\*\*Place the patient on a pulse oximeter device – if available*** | • Remove the NPA if:  - the patient is not tolerating the NPA  - an advanced airway is to be inserted |
| ⧫ Re-assess airway patency and breathing:  • Skin color  • Chest rise and fall  • Upper airway sounds |  |
| ⧫ Administer oxygen via mask, nasal cannula, or  BMV device – ***if indicated*** ***per Los Angeles County EMS Agency Reference No. 1304*** | * A goal of oxygen administration is to deliver the minimum amount of oxygen to meet the needs of the patient and to maintain an oxygen saturation level of 94-98%. * When available, use pulse oximetry to guide oxygen delivery. The desired SpO2 for most non-critical patients is 94-98%. * **SPECIAL CONSIDERATION:** For chronic obstructive pulmonary disease (COPD), the goal is to titrate oxygen to keep the SpO2 at 88-92%. * Document the SpO2 reading on the EMS Report or ePCR. |
| ⧫ Dispose of contaminated equipment using an approved technique | • Place the contaminated equipment in plastic bag, seal, and dispose of at designated sites. |
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| **RE-ASSESSMENT**  **(Ongoing Assessment)** | |
| **Skill Component** | **Key Concepts** |
| ⧫ Assess airway and breathing at least every five (5) minutes or sooner:  • Changes in airway sounds  • Changes in respiratory status  • Respiratory assessment:  - rate  - effort/quality  - tidal volume   * Pulse ox reading   ***\*\*Manage patient condition as indicated.*** | * Assess airway and breathing at least every five (5) minutes or if there are changes in airway sounds or respiratory status. * Evaluating and comparing the results from a prior assessment assists with recognizing that the patient is improving, responding to treatment or condition is deteriorating. |
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| **PATIENT REPORT AND DOCUMENTATION** | |
| **Skill Component** | **Key Concepts** |
| § Give patient report to equal or higher level of care personnel | • The report should consist of all pertinent information regarding the assessment findings, treatment rendered, and the patient’s response to care provided. |
| § Verbalize/Document:  • Indication for insertion  • Indication for removal - *if applicable*  • Patient tolerance  • Size of NPA used  • Respiratory assessment:  - rate  - effort/quality  - tidal volume  • Oxygen administration - *If needed*  - airway adjunct/ventilatory devices used  - oxygen liter flow  - ventilation rate | • Documentation must be on either the Los Angeles County EMS Report form, departmental Patient Care Record form, or ePCR  • Documenting reassessment information provides a comprehensive picture of patient’s response to treatment.  • The last reassessment information (before patient care is transferred) should be documented in the section of the EMS form. |

Developed: 9/02 Revised 10/2018



**AIRWAY EMERGENCY / AIRWAY MANAGEMENT**

**NASOPHARYNGEAL AIRWAY (NPA)**

**Supplemental Information**

**COMPLICATIONS:**

• Vomiting

• Laryngospasm if the airway is too long

• Injury and pressure necrosis to nasal mucosa

• Laceration of adenoids or tissue lining the nasal cavity

• Severe nosebleed

• Airway obstruction if kinked or clogged

**NOTES:**

• Every unresponsive patient needs to be evaluated for a patent airway and have an appropriate airway adjunct (NPA or OPA) inserted if they have or do not have a gag reflex.

• Too short of an airway that does not extend past the tongue may obstruct the airway if the tongue falls back into the oropharynx.

• Too long of an airway may pass into the esophagus and cause hypoventilation and gastric distention.

• A nasopharyngeal airway does not protect the lower airway from vomitus or secretions or hold the tongue forward.

• Never force a nasopharyngeal airway into nostril. If an obstruction or deviated septum is encountered, remove the NPA and try the other nostril.

• Use soft, flexible NPAs rather than the rigid, clear plastic NPAs which will less likely cause soft-tissue damage or nose bleeds.

• A second rescuer is needed to maintain in-line axial stabilization if spinal motion restriction is required.

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| **COMPONENTS OF AN AIRWAY BAG:** | |
| **BMV devices – adult, child, infant** | **Portable suction** |
| **OP/NP airways – all sizes** | **Suction equipment – various sizes** |
| **Nasal cannula** | **Portable oxygen cylinder & oxygen regulator** |
| **Simple face mask – adult, child, and infants** | **Pulse Oximeter** |
| **Non-rebreather – adult, child, and infants** | **Water soluble lubricant** |