



EMT Skill Sheet

Skill #1 - Oxygen Administration

Student Name: _____

Pass date - _____

Evaluator Name _____ Signature: _____

This skill will be performed on both people and Manikins (Sign if Student Passes Skill) Date

Time Start: _____	Complete Time: _____	
Information on this skill can be found in the Text Book and on the class D2L website		Comments
Note: The Evaluator will advise the student that the Scene Size-up and Primary Assessment has been completed by their partner who directs them to assemble the oxygen tank & to place the patient on a Non-Rebreather Mask (NRM)		
Takes, or verbalizes, body substance isolation precautions of Gloves and Eye Protection (Critical Fail!)		
Informs patient of SpO2 and get consent. Places patient on SpO2 for skill and documents Room Air (RA) Saturation & checks pulse for verification (15 sec pulse OK). Skip this for severely dyspneic patients.		
Handles the oxygen tank in a safe manner (Critical Fail!) –		
<ul style="list-style-type: none"> ✓ Does not leave tank upright without being secured (Critical Fail!) ✓ Does not hold tank by valve stem • Makes sure their hands are clean & free of grease/oils and No flames or smoking around oxygen 		
Physically examines tank & checks for -		
<ul style="list-style-type: none"> ✓ Damage or rust and that it is a medical oxygen cylinder (DOT yellow sticker that states Oxygen) • Hydrostatic Test Date (Month & Year stamped on tank collar) - Student does not need to find ➤ Size – D tanks hold approximately 350 liters of Oxygen when full 		
<ul style="list-style-type: none"> ≈If necessary - Removes plastic cover from valve stem (protects from dirt and moisture) – keeps O ring ➤ The valve stem should not be covered with tape 		
“Cracks” the cylinder to blow off contaminants –		
<ul style="list-style-type: none"> ✓ Tank valve should be facing away from people when opened 		
Checks the regulator –		
<ul style="list-style-type: none"> ✓ O ring is in place and is not damaged – changes it if necessary ✓ Checks regulator for defects, dirt or damage and checks to make sure it is an Oxygen regulator ✓ Checks Pin Indexing System – locks regulator to valve stem and is a standardized safety system that prevents oxygen regulators from going on any other type of cylinder ✓ Ensure that the regulator flow is set 0 (zero) before attaching it to the cylinder 		
Attaches the regulator to the tank –		
<ul style="list-style-type: none"> ✓ Hand tightens the screw bolt or yolk – DO NOT over tighten or use tools ✓ SLOWLY and COMPLETELY opens the tank valve (may turn back ½ or ¼ turn after opening) 		
Checks the tank/regulator for leaks by listen and feeling (Critical Fail!)		
Checks the tank pressure and verbalizes tank pressure		
<ul style="list-style-type: none"> ✓ Full Tank is 2000 psi • Should always leave no less than 200 psi of safe residual pressure in all compressed Oxygen tanks • A full D size tank should last about 19 minutes at 15 liters per minute (LPM) 		
Attaches the proper size Non-Rebreather Mask (NRM) to the regulator flow valve		
<ul style="list-style-type: none"> ✓ NRM are used for critically ill/injured or suspected hypoxia/shock patients that are breathing • Patients with nausea/emesis may cause airway compromise with NRM use 		
Adjust the oxygen liter flow to 10 to 15 liters per minute (LPM) for the NRM (Critical Fail!)		
<ul style="list-style-type: none"> ✓ Liter Flow at 10 to 15 LPM provides up to 80% to 90% oxygen concentration (15 LPM is standard) ➤ Some textbooks state different numbers 		
Pre-fills the oxygen reservoir bag on NRM before placing it on the patient (Critical Fail!)		
Informs patient of treatment and gets patient consent		
Applies the NRM to the patient’s face and adjusts to fit		
Assesses the patient after oxygen treatment – Physical Exam and/or Vital signs		
<ul style="list-style-type: none"> ✓ Verifies Pulse Oximetry with pulse check (may give false readings – see Page 3) 		
Assesses the oxygen reservoir bag		
<ul style="list-style-type: none"> ✓ Reservoir bag must stay 2/3 full as patient inhales. If the reservoir bag collapses more the EMT must turn up the liter flow to higher liter flow. DO NOT remove NRM from patient to do this. 		
Note: The Evaluator must advise the candidate that the patient is not tolerating the Non-Rebreather Mask. The medical director has ordered you to apply a nasal cannula to the patient.		
Informs the patient about the discontinuation of the treatment		
Removes the Non-Rebreather Mask from the patient and turns O2 flow rate to 0 (zero)		

Attaches the Nasal Cannula (NC) to the oxygen flow valve - Loosens NC slip ring		
Adjust the oxygen liter flow to 1 to 6 liters per minute (LPM) for the NC (Critical Fail!) <ul style="list-style-type: none"> ✓ Liter Flow at 1 to 6 LPM provides 24% to 44% oxygen concentration (2 to 4 LPM most common) ➤ Some textbooks state different numbers 		
Informs patient of treatment and gets patient consent		
Applies the nasal cannula to the patient correctly and adjusts to fit – NC tube must stay anterior of patient		
Assesses the patient after oxygen treatment – Physical Exam and/or Vital signs <ul style="list-style-type: none"> ✓ Verifies Pulse Oximetry with pulse check (may give false readings – see Page 3) 		
Note: The Evaluator must advise the candidate to remove the Nasal cannula and to set up a Small Volume Nebulizer		
Informs the patient about the discontinuation of the treatment		
Loosens NC slip ring and removes the nasal cannula from the patient and turns O2 flow rate to 0 (zero)		
Sets-up a Small Volume Nebulizer (also called Hand Held Nebulizer or HHN, also called T-piece) - Must set up and place 1 vial of Normal Saline in nebulizer and turn on O2 to form mist <ul style="list-style-type: none"> ✓ Nebulizers are used for patients in Mild to Moderate respiratory distress in conjunction with a Bronchodilator Medication (student should ask about allergies) ✓ Checks Medication – (5/6 Rights) Right - Patient, Medication, Dose, Route, Time (Documentation) ✓ Oxygen flow rate at 6-8 LPM to produce a fine mist (4 LPM usually does not produce a fine mist) ✓ Informs Patient how to use Nebulizer ➤ Nebulization Masks are used for patients that cannot hold HHN or have more severe distress 		
Note: The Evaluator must advise the student to discontinue oxygen therapy and disassemble and the oxygen tank		
Shuts off the oxygen liter flow and shuts down the oxygen tank at valve stem		
Relieves the pressure within the regulator – and resets the liter flow rate back to 0 (Zero) or off		
Disassembles the oxygen tank from the regulator and verbalizes safely securing and storing oxygen tank		
Note: The Evaluator asks the EMT to show and verbalize the proper use of the following equipment: Adult BVM, Infant BVM, Pocket Mask using the mannequins including verbalize the proper oxygen flow rate and then explain CPAP		
Adult Bag Mask Device – verbalize oxygen flow rate and where O2 tubing is attached (also called Bag Valve Mask (BVM) or Ambu Bag) <ul style="list-style-type: none"> ✓ Liter Flow 15 (Adult) LPM provides up to 90% to 100% oxygen concentration (21% on Room Air) ➤ Some textbooks state different numbers Demonstrates 1 EMT use – opens airway with EC clamp and gives 2 initial ventilations & then provides - <ul style="list-style-type: none"> ✓ 1 ventilation every 5-6 seconds for the adult – Continue to ventilate till evaluator tells you to stop ✓ Each ventilation should be over approximately 1 second and see visible bilateral rise and fall of chest 		
Infant Bag Mask Device - verbalize oxygen flow rate and where O2 tubing is attached (also called Bag Valve Mask (BVM) or Ambu Bag) <ul style="list-style-type: none"> ✓ Liter Flow 10 (Infant/Child) LPM provides up to 90% to 100% oxygen concentration ➤ Some textbooks state different numbers Demonstrates 1 EMT use – opens airway with EC clamp and gives 2 initial ventilations then provides - <ul style="list-style-type: none"> ✓ 1 ventilation every 3-5 seconds for an infant (1 month to 1 year) or child (1 year to puberty) ✓ Each ventilation should be over approximately 1 second and see visible bilateral rise and fall of chest ✓ Infant and Child Bag Mask Devices often have a pressure-limiting “pop off“ valve. This valve prevents high pressures during positive pressure ventilation, which may cause baro-trauma in pediatric patients. EMS may lock OFF the pop off valve for critical prehospital patients because high pressures are often required for dead or dying pediatric patients in the prehospital environment 		
Sets-up an Adult Pocket Mask and attaches oxygen tubing and shows double EC seal on manikin – Does not need to Ventilate Pocket Mask <ul style="list-style-type: none"> ✓ Verbalizes proper flow rate of 15 LPM which provides up to 50-55% oxygen concentrations (16% to 17% on Room Air with mouth to mask ventilation) 		
Explains Continuous Positive Airway Pressure CPAP – does not need to demonstrate CPAP <ul style="list-style-type: none"> ✓ Used for Medical patients in Moderate to Severe respiratory distress and should be sitting up ✓ Contraindications – Patient unable to follow commands, apneic (patient must be breathing), tracheostomy, chest trauma or pneumothorax, active upper GI bleed, active emesis, decompensated shock- low BP (some systems may not use CPAP for Pediatrics/Asthma - based on Local Protocol) 		
Note: The Evaluator must advise the student Restock Airway bag (new NRM, NC, and Nebulizer and NS bullet)		
Contacts Medical Control and/or documents Standing Orders/Protocols followed		
More than 4 missed points results in Failure	Total Missed Points	
✓	Actions performed and/or verbalized by student when doing skill	
➤	Additional information on the procedure	
•	Key Points that student should know but do not need to verbalized/do unless asked	

EMT Skill Sheet - Oxygen Administration**Skill- 1****Dangers of Hyper-oxygenation (Hyperoxia)**

- High oxygen concentrations can cause free radicals that damage cells
- It is possible that high oxygen may cause atelectasis of alveoli by washing out nitrogen
- It is possible that high oxygen concentrations may cause vasoconstriction

2015 ECC guidelines: administer oxygen to keep saturations at or above 94%. Note some COPD patients may have baseline SpO₂s as low as 88%-90%.

Any patient suspected of being in shock, profound hypothermia or has respiratory distress should get high concentrations of Oxygen! If SpO₂ is not available give Oxygen!

Pulse Oximetry is the standard of care in all unstable patients, patients in respiratory distress, and **any patients receiving oxygen therapy**. You must palpate a manual pulse to ensure that it correlates with the LED pulse display on the pulse oximeter. If it does not match the pulse oximeter may be giving a false reading. Leave Pulse Oximetry on Patient for the entire call if patient is on O₂ and document readings.

SpO₂ – The following may cause readings of the Pulse Oximetry to be inaccurate

- | | | |
|---------------------------|--|--------------------------------|
| • Dirty or oily fingers | • Poisoning – CO, cyanide, cigarettes | • Bright lights |
| • Cold or hot extremities | • Movement/Shivering | • Equipment issues (batteries) |
| • Hypoperfusion | • Anemia | • IV medical injected dyes |
| • Nail polish | • Skin tone (dark) | • Genetic conditions |
| | | • Outside interference (MRI) |

Additional Skill Information;

- Gas cylinders are often color-coded, but the codes are not standardized across different jurisdictions, and sometimes are not regulated. Cylinder color should *not* be used for positive product identification. Gas cylinders have labels affixed to them, which identify the product they contain, and the label alone should be used for positive identification.
- Whenever possible, cylinders should be placed and secured in an upright position not only when in storage, but also when in use. If cylinders were stored in an upright manner, any particulate in the cylinder would generally settle in the bottom of the cylinder and not as easily entering into the oxygen flow discharge.
- Cylinders should also be stored with a plastic cap over the post valve opening to reduce the possibility of contamination build-up around the valve opening.
- **Cylinder valves should be opened slowly.** Oxygen cylinder valves should be opened all the way. Open up the oxygen cylinder valve stem just a crack. Once the needle on the high pressure gauge has stopped, open up the valve all the way. This back seats the valve. Oxygen cylinders must have the valve opened up all the way because of the high pressure in the cylinder. There is a back-seating valve on the oxygen cylinder. This prevents the high-pressure gas from leaking out through the threaded stem.
- Do not look at the regulator pressure gauge until the cylinder valve is fully opened

Note: SpO₂ and SaO₂ – the terms SpO₂ and SaO₂ are often used the same but are slightly different.

- SaO₂ is an invasive measure of the saturation level of oxygen in hemoglobin, as measured by samples obtained from arterial puncture. Your Textbook and others uses this term often to represent SpO₂.
- SpO₂ is a noninvasive measure the saturation level of oxygen in hemoglobin; can be determined by pulse oximetry. This is the term most commonly used in EMS.

State and Local Scope of Practice Differences

1. California SOP allows EMTs to set up Nebulization treatments for ALS Providers. EMTs may assist patient with MDI.
2. EMTs may use SpO₂ since 2013 under California state law

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