



MEDIC
First Aid

**AMERICAN SAFETY &
HEALTH INSTITUTE**



EMERGENCY USE OF MEDICAL OXYGEN

skill guide
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Please note: The scenarios and treatment sequences depicted in this program are fictitious dramatizations. Consequently, they represent an imperfect simulation of reality. To clearly demonstrate skills, providers may not always be shown wearing appropriate PPE.

PROCEDURE FOR ADULT BASIC LIFE SUPPORT INCLUDING EMERGENCY USE OF MEDICAL OXYGEN

BLS PROVIDER

PERFORM AN ASSESSMENT

- ✓ Assess scene safety.
- ✓ Take standard precautions.*
- ✓ Assess responsiveness.
- ✓ Activate EMS and/or EAP.†
- ✓ Get an AED, emergency response equipment, & medical oxygen (or send someone else to).

ASSESS BREATHING & PULSE AT THE SAME TIME. IS THE PULSE DEFINITELY FELT WITHIN 10 SECONDS?

UNRESPONSIVE, PULSE FELT. BREATHING NORMALLY.

MAINTAIN AN OPEN AIRWAY

- ✓ Regularly reassess responsiveness, airway, breathing, pulse, and SpO2 until another BLS or ALS provider takes over.
- ✓ To help protect the airway, place an uninjured patient on their side in the recovery position.
- ✓ S/S of moderate to severe hypoxia/SpO2 below 91%? Give medical oxygen at 12-15 LPM using a non-rebreather mask.‡

UNRESPONSIVE, PULSE FELT. NOT BREATHING NORMALLY.

PROVIDE RESCUE BREATHING OR BAG MASK VENTILATION

- ✓ Adult or child with signs of puberty: Give 1 breath every 6 seconds.
- ✓ Give naloxone if opioid overdose possible.‡
- ✓ Check carotid pulse every 2 minutes.
- ✓ If no pulse, start CPR.

UNRESPONSIVE, NO PULSE FELT. NOT BREATHING NORMALLY OR ONLY GASPING.

START CPR

- ✓ Position patient on a firm flat surface.
- ✓ Perform cycles of 30 high-quality chest compressions and 2 rescue breaths.

GIVE MEDICAL OXYGEN AT 12-15 LPM BY CPR MASK WITH OXYGEN INLET OR BAG-MASK WITH RESERVOIR BAG.‡
DO NOT DELAY CPR AED TO GIVE IT.

USE THE AED AS SOON AS IT IS AVAILABLE. APPLY PADS TO PATIENT'S BARE CHEST.
CONTINUE HIGH-QUALITY CPR WHILE AED CHARGES. FOLLOW AED PROMPTS.

SHOCK ADVISED?

YES§

- ✓ Give 1 shock.
- ✓ Immediately resume CPR.
- ✓ Follow AED prompts.

NO

- ✓ Immediately resume CPR.
- ✓ Follow AED prompts.

CONTINUE CPR AND AED USE UNTIL OTHER BLS OR ALS PROVIDERS TAKE OVER OR PATIENT STARTS RESPONDING (BREATHING, MOVING, REACTING).

CPR TASKS FOR TWO BLS PROVIDERS: ADULT PATIENT

BLS PROVIDER 1: GIVE COMPRESSIONS

- ✓ Position yourself at patient's side.
- ✓ Perform cycles of 30 high-quality chest compressions. Count out loud.
- ✓ Push hard and fast at a rate of 100-120 compressions per minute.
- ✓ Compress the chest at least 2 inches (5cm).
- ✓ Allow the chest to recoil completely after each compression. Do not lean on the chest between compressions.
- ✓ Switch task of giving compressions every 2 minutes (when the AED is analyzing, or sooner if tired).
- ✓ Minimize interruptions in chest compressions. Try to limit switches to <5 seconds.

BLS PROVIDER 2: GIVE BREATHS

- ✓ Position yourself at the patient's head.
- ✓ Maintain an open airway with head tilt-chin lift or jaw thrust.
- ✓ Give 2 rescue breaths. Each breath should cause visible chest rise.
- ✓ Avoid excessive ventilation (too many breaths or too much volume).
- ✓ Encourage the compressor to compress hard and fast, and allow for complete recoil.

* Use appropriate personal protective equipment (PPE) to protect against possible exposure to infectious agents (gloves, gowns, masks, respirators, bag-mask device with HEPA filter and goggles/face shield). Perform hand hygiene immediately after removing gloves.

† Call 911 to activate Emergency Medical Services (EMS) using a mobile device (if appropriate) and/or activate your occupational emergency action plan (EAP).

‡ Per local protocol/standing orders.

§ Move the medical oxygen delivery device away from defibrillation pads.

PROCEDURE FOR ADULT CPR AED INCLUDING EMERGENCY USE OF MEDICAL OXYGEN

CPR AED PROVIDER

PERFORM AN ASSESSMENT

Assess
Scene Safety

Take
Standard Precautions*

Assess
Responsiveness

Activate
EMS and/or EAP†

Send Someone to
Get a **First Aid Kit, AED,
& Medical Oxygen**
(unless readily available to you)

ASSESS BREATHING FOR NO MORE THAN 10 SECONDS

UNRESPONSIVE, BREATHING NORMALLY

► MAINTAIN AN OPEN AIRWAY

- ✓ Place an uninjured, unresponsive person on their side in the recovery position to help protect the airway.
- ✓ Give naloxone for suspected opioid overdose (if available).
- ✓ S/S of moderate to severe hypoxia/SpO2 below 91%? Give medical oxygen at 12-15 LPM using a non-rebreather mask.

UNRESPONSIVE, NOT BREATHING NORMALLY OR ONLY GASPING

► START CONVENTIONAL CPR

- ✓ Position person on a firm, flat surface.
- ✓ Perform cycles of 30 high-quality chest compressions and 2 rescue breaths.§
- ✓ If another trained CPR provider is available, take turns performing compressions. Switch quickly, about every two minutes.
- ✓ Give naloxone for suspected opioid overdose, but do not delay CPR AED to give it.
- ✓ Give medical oxygen at 12-15 LPM by CPR mask with oxygen inlet. Do not delay CPR AED to give it.

NEVER DELAY APPROPRIATE CARE FOR LIFE-THREATENING CONDITIONS SUCH AS CPR AED OR CONTROL OF SEVERE BLEEDING TO GET, SET UP, OR ADMINISTER MEDICAL OXYGEN IN AN EMERGENCY.

UNRESPONSIVE. NOT BREATHING NORMALLY. USE THE AED AS SOON AS IT IS AVAILABLE.
APPLY PADS TO PERSON'S BARE CHEST. FOLLOW AED PROMPTS.

SHOCK ADVISED?

YES**

NO

- ✓ Clear the person.
- ✓ Give 1 shock.
- ✓ Immediately resume high-quality CPR.
- ✓ Follow AED prompts.

- ✓ Immediately resume high-quality CPR.
- ✓ Follow AED prompts.

CONTINUE UNTIL OTHER CPR OR EMS PROVIDERS TAKE OVER OR THE PERSON STARTS RESPONDING
(BREATHING, MOVING, REACTING).






* Use appropriate personal protective equipment (PPE) to protect against possible exposure to infectious agents. PPE may include gloves, goggles or face shields, surgical masks, gowns, respirators, and CPR masks. Wash your hands immediately after removing gloves.

† If you are not sure an emergency exists or when any person is unresponsive, badly hurt, looks or acts very ill, or quickly gets worse - call 911 to activate Emergency Medical Services (EMS) using a mobile device and/or activate your emergency action plan (EAP). Listen to the dispatcher's instructions.

§ For adults and teens in cardiac arrest, untrained bystanders and trained CPR providers should at a minimum provide compression-only CPR, with or without dispatcher assistance. If willing and able, trained CPR providers should perform conventional CPR at a ratio of 30 compressions to 2 rescue breaths. In the case of drowning, begin with 2 rescue breaths.

** Move the CPR mask away from defibrillation pads.

DELIVERY DEVICES FOR OXYGEN DEFICIENCY IN AN EMERGENCY

DEVICE	FLOW RATE	OXYGEN CONCENTRATION	USE
Low-flow Nasal Cannula 	1–6 LPM	24–44%	Responsive, breathing person with signs and symptoms of mild hypoxia
Simple Face Mask 	6–10 LPM	35–50%	Responsive, breathing person with signs and symptoms of mild hypoxia
Non-Rebreather Mask 	12–15 LPM	85–90%	Responsive or unresponsive adequately breathing person with signs and symptoms of moderate to severe hypoxia
CPR Mask with Oxygen Inlet* 	12–15 LPM	50–60%	Unresponsive person who is not breathing normally or only gasping (incorporated into conventional CPR)
Bag-Mask with Reservoir Bag 	12–15 LPM	90–100%	Unresponsive person who is not breathing normally or only gasping (incorporated into conventional CPR)

* The CPR mask may also be used for a responsive, breathing person with signs and symptoms of mild hypoxia in place of a simple face mask.

ASSESSING FOR OXYGEN DEFICIENCY IN AN EMERGENCY

one ASSESS SCENE

- Assess scene safety, taking standard precautions.

two ASSESS RESPONSIVENESS

- If the scene is safe, assess responsiveness.

three ACTIVE EMS/EAP, GET AED & MEDICAL OXYGEN

- Call 911 to activate EMS using a mobile device and/or activate your EAP.
- After activating, and unless they are readily available to you, send someone to get the first aid or emergency response kit, an AED, and the medical oxygen delivery system.



four ASSESS BREATHING

- Assess the person's breathing for no more than 10 seconds.

five OBTAIN CONSENT

- If the person is breathing and responsive, obtain consent.
- Introduce yourself and ask, "May I help you?"
- Assess for life-threatening conditions, including observing for signs and symptoms of hypoxia.
- If present, immediately provide appropriate care.



six PLACE PULSE OXIMETER



- Switch on the pulse oximeter and place it on the person's middle or index finger.
- Wait a few seconds until the reading stops changing and displays one steady number.

NEVER DELAY APPROPRIATE CARE FOR LIFE-THREATENING CONDITIONS SUCH AS CPR AED OR CONTROL OF SEVERE BLEEDING TO GET, SET UP, OR ADMINISTER MEDICAL OXYGEN IN AN EMERGENCY.

UNRESPONSIVE, BREATHING ADULT. MODERATE TO SEVERE HYPOXIA

one ASSESS BREATHING

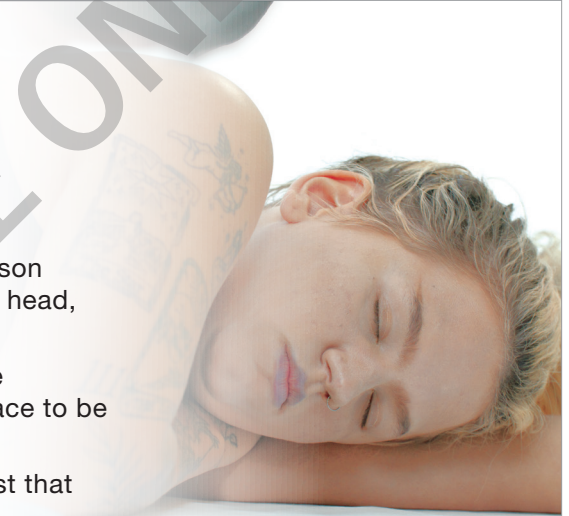
- If the person is unresponsive, uninjured, and breathing normally, place them on their side in the recovery position to help protect the airway.

two POSITION ARMS & RAISE KNEE

- Place the arm nearest you up alongside the person's head.
- Bring the far arm across the chest and place the back of the hand against the cheek.
- Grasp the far leg just above the knee and pull it up so the foot is flat on the ground.

three ROLL PERSON

- Grasping the shoulder and hip, roll the person toward you in a single motion, keeping the head, shoulders, and body from twisting.
- Make sure the head ends up resting on the extended arm and roll far enough for the face to be angled towards the ground.
- Make sure there is no pressure on the chest that might restrict breathing.



four ASSESS FOR LIFE- THREATENING CONDITIONS

- Assess for life-threatening conditions, including signs and symptoms of hypoxia.
- If present, immediately provide appropriate care.



five PLACE PULSE OXIMETER

- Switch on the pulse oximeter and place it on the person's middle or index finger.*



NEVER DELAY APPROPRIATE CARE FOR LIFE-THREATENING CONDITIONS SUCH AS CPR AED OR CONTROL OF SEVERE BLEEDING TO GET, SET UP, OR ADMINISTER MEDICAL OXYGEN IN AN EMERGENCY.

* Never withhold medical oxygen in an emergency when a person has signs and symptoms of hypoxia, with or without a pulse oximeter.

SCENARIO SHEET FOUR

NEVER DELAY APPROPRIATE CARE FOR LIFE-THREATENING CONDITIONS SUCH AS CPR AED OR CONTROL OF SEVERE BLEEDING TO GET, SET UP, OR ADMINISTER MEDICAL OXYGEN IN AN EMERGENCY.

[Fill in the blank to adjust to your occupational setting: lifeguarding, security, law enforcement, manufacturing, construction, maritime, office setting, school setting, etc.]

You are a designated first aid provider responding to [a shout for help] for an unresponsive person. Upon arrival at the scene, you are directed toward a person lying on [the bathroom floor]. The scene is safe. You have taken standard precautions with appropriate PPE. Your EAP has been activated and EMS is on the way with a 7-minute response time. You have your emergency response kit, an AED, and the medical oxygen delivery system, which includes a pulse oximeter. The person is lying flat on their back, apparently unconscious. There is a noticeable slightly blue color on the inside of their lips. Demonstrate what actions you would take next.

PROCEDURE	PROVIDER ACTION (PERFORMANCE CRITERIA)	PROMPTER
Assess Responsiveness & Breathing	<ul style="list-style-type: none"> Tap them and ask loudly, "Are you okay?" Assess the person's breathing for no more than 10 seconds. Look at the chest and face for signs of normal breathing. Place them on their side in the recovery position to help protect the airway. 	<p><i>[Prompt with Provider Action only as needed.]</i></p> <p>Person is unresponsive and breathing normally</p>
Position Arms & Raise Knee	<ul style="list-style-type: none"> Place the arm nearest you up alongside the person's head. Bring the far arm across the chest and place the back of the hand against the cheek. Grasp the far leg just above the knee and pull it up so the foot is flat on the ground. 	<p>Place them in the recovery position.</p>
Roll Person	<ul style="list-style-type: none"> Grasping the shoulder and hip, roll the person toward you in a single motion, keeping the head, shoulders, and body from twisting. Make sure the head ends up resting on the extended arm and roll far enough for the face to be angled towards the ground. Make sure there is no pressure on the chest that might restrict breathing. 	
Assess for Life-Threatening Conditions	<ul style="list-style-type: none"> Assess for life-threatening conditions, including observing for signs and symptoms of hypoxia. If present, immediately provide appropriate care. 	<p>The person remains unresponsive. Their skin appears sweaty and feels cool, and their nail beds and lips are bluish.</p>
Place Pulse Oximeter	<ul style="list-style-type: none"> Switch on the pulse oximeter and place it on the person's middle or index finger. 	<p>Place a pulse oximeter. SpO2 is 80%.</p>

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