
LIFEGUARD

# 7 Before Providing Care and Victim Assessment

**After you rescue a victim from the water**, your next steps are to identify any life-threatening conditions by performing a primary assessment and providing care. You also will need to perform a scene size-up and a primary assessment if a victim is injured or becomes ill on land. While caring for a victim, it is crucial that you protect yourself and others from the transmission of infectious disease.

In this chapter, you will learn how infectious diseases occur and how you can prevent them from spreading. This chapter also covers the general procedures for responding to sudden illness and injury on land.

# 7-1 BLOODBORNE PATHOGENS

**Bloodborne pathogens**, such as bacteria and viruses, present in blood and other potentially infectious material (OPIM), such as other body fluids, can cause disease in humans. Pathogens are found almost everywhere in our environment. Bacteria can live outside of the body and commonly do not depend on other organisms for life. If a person is infected by bacteria, antibiotics and other medications often are used to treat the infection. Viruses depend on other organisms to live. Once viruses are in the body, they are difficult to kill. This is why prevention is critical. The bloodborne pathogens of primary concern to lifeguards are the hepatitis B virus, hepatitis C virus and human immunodeficiency virus (HIV) (Table 7-1).

Table 7-1: **How Bloodborne Pathogens Are Transmitted**

| Disease | Signs and Symptoms | Mode of Transmission | Infectious Material |
|---|---|---|---|
| Hepatitis B | Fatigue, abdominal pain, loss of appetite, nausea, vomiting, joint pain | Direct and indirect contact | Blood, saliva, vomitus, semen |
| Hepatitis C | Fatigue, dark urine, abdominal pain, loss of appetite, nausea, jaundice | Direct and indirect contact | Blood, saliva, vomitus, semen |
| HIV | Symptoms may or may not appear in the early stage; late-contact-stage symptoms may include fever, fatigue, diarrhea, skin rashes, night sweats, loss of appetite, swollen lymph glands, significant weight loss, white spots in the mouth, vaginal discharge (signs of yeast infection) and memory or movement problems | Direct and possibly indirect contact | Blood, saliva, vomitus, semen, vaginal fluid, breast milk |

## Hepatitis B

**Hepatitis B** is a liver infection caused by the hepatitis B virus. Hepatitis B may be severe or even fatal. The virus can live in the body for up to six months before symptoms appear. These may include flu-like symptoms such as fatigue, abdominal pain, loss of appetite, nausea, vomiting and joint pain. **Jaundice** (yellowing of the skin and eyes) is a symptom that occurs in the later stage of the disease.

Medications are available to treat chronic hepatitis B infection, but they do not work for everyone. The most effective means of prevention is the hepatitis B vaccine. This vaccine, which is given in a series of three doses, provides immunity to the disease.

Scientific data show that hepatitis B vaccines are safe for adults, children and infants. Currently, no evidence exists indicating that hepatitis B vaccines cause chronic illnesses.

Your employer must make the hepatitis B vaccination series available to you because you could be exposed to the virus at work. The vaccination must be made available within 10 working days of the initial assignment, after appropriate training has been completed. However, you can choose to decline the vaccination series. If you decide not to be vaccinated, you must sign a form affirming your decision.

## Hepatitis C

**Hepatitis C** is a liver disease caused by the hepatitis C virus. Hepatitis C is the most common chronic bloodborne infection in the United States. The symptoms are similar to those of the hepatitis B infection and include fatigue, abdominal pain, loss of appetite, nausea, vomiting and jaundice.

Currently, no vaccine exists against hepatitis C, and no treatment is available to prevent infection after exposure. Hepatitis C is the leading cause of liver transplants. For these reasons, hepatitis C is considered to be more serious than hepatitis B.

## HIV

**HIV** is the virus that causes AIDS. HIV attacks white blood cells and destroys the body's ability to fight infection. This weakens the body's immune system. The infections that strike people whose immune systems are weakened by HIV are called **opportunistic infections**. Some opportunistic infections include severe pneumonia, tuberculosis, Kaposi's sarcoma and other unusual cancers.

People infected with HIV initially may not feel or look sick. A blood test, however, can detect the HIV antibody. When an infected person has a significant drop in a certain type of white blood cells or shows signs of having certain infections or cancers, they may be diagnosed as having AIDS. These infections can cause fever, fatigue, diarrhea, skin rashes, night sweats, loss of appetite, swollen lymph glands and significant weight loss. In the advanced stages, AIDS is a very serious condition. People with AIDS eventually develop life-threatening infections and can die from these infections. Currently, there is no vaccine against HIV.

There are many other illnesses, viruses and infections to which you may be exposed. Keep immunizations current, have regular physical check-ups and be knowledgeable about other pathogens. For more information on the illnesses listed above and other diseases and illnesses of concern, contact the Centers for Disease Control and Prevention (CDC) at 800-342-2437 or go to cdc.gov.

# 7-2 HOW PATHOGENS SPREAD

Exposures to blood and other potentially infectious materials occur across a wide variety of occupations. Lifeguards, healthcare providers, emergency medical services (EMS) personnel, public safety personnel and other workers can be exposed to blood through injuries from needles and other sharp devices, as well as from direct and indirect contact with skin and mucous membranes. For any disease to be spread, including bloodborne diseases, all four of the following conditions must be met:

- A pathogen is present.
- A sufficient quantity of the pathogen is present to cause disease.
- A person is susceptible to the pathogen.
- The pathogen passes through a portal of entry (e.g., eyes, mouth and other mucous membranes; non-intact skin or skin pierced by needlesticks; animal and human bites, cuts, abrasions and other means).

To understand how infections occur, think of these four conditions as pieces of a puzzle (Figure 7-1). All of the pieces must be in place for the picture to be complete. If any one of these conditions is missing, an infection cannot occur.

At the workplace, bloodborne pathogens, such as hepatitis B virus, hepatitis C virus and HIV, are spread primarily through direct or indirect contact with infected blood or other body fluids. These viruses are not spread by food or water, or by casual contact, such as hugging or shaking hands. The highest risk of transmission while at work is unprotected direct or indirect contact with infected blood.

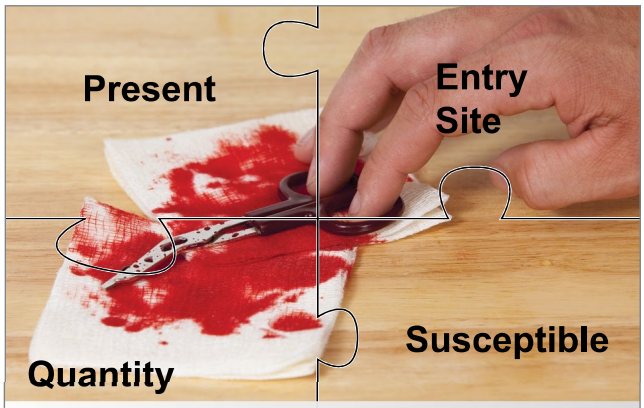


Figure 7-1 | How pathogens spread

## Direct Contact

**Direct contact transmission** occurs when infected blood or other potentially infectious material from one person enters another person's body. For example, direct contact transmission can occur through infected blood splashing in the eye or from directly touching the potentially infectious material of an infected person with a hand that has an open sore (Figure 7-2).


Figure 7-2 | Direct contact

## Indirect Contact

Some bloodborne pathogens also can be transmitted by indirect contact (Figure 7-3). **Indirect contact transmission** can occur when a person touches an object that contains the blood or other potentially infectious material of an infected person and that blood or potentially infectious material enters the body through a portal of entry. Such objects include soiled dressings, equipment and work surfaces that have been contaminated with an infected person's potentially infectious material. For example, indirect contact can occur when a person picks up blood-soaked bandages with a bare hand and the pathogens enter through a break in the skin on the hand.


Figure 7-3 | Indirect contact

## Droplet and Vector-Borne Transmission

Other pathogens, such as the flu virus, can enter the body through **droplet transmission**. This occurs when a person inhales droplets from an infected person's cough or sneeze (Figure 7-4). **Vector-borne transmission** of diseases occurs when the body's skin is penetrated by an infectious source, such as an animal or insect bite or sting (Figure 7-5). Examples of diseases spread through vector-borne transmission include malaria and West Nile virus.

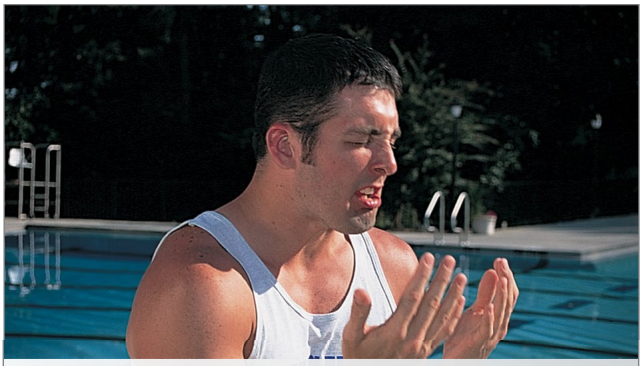


Figure 7-4 | Droplet transmission

Figure 7-5 | Vector-borne transmission

## Risk of Transmission

Hepatitis B, hepatitis C and HIV share a common mode of transmission—direct or indirect contact with infected blood or other potentially infectious material —but they differ in the risk of transmission. Individuals who have received the hepatitis B vaccine and have developed immunity to the virus have virtually no risk for infection by the hepatitis B virus. For an unvaccinated person, the risk for infection from hepatitis B-infected blood from a needlestick or cut exposure can be as high as 30 percent, depending on several factors. In contrast, the risk for infection from hepatitis C-infected blood after a needlestick or cut exposure is about 2 percent, whereas the risk of infection from HIV-infected blood after a needlestick or cut exposure is far less than 1 percent.

# 7-3 PREVENTING THE SPREAD OF BLOODBORNE PATHOGENS

## OSHA Regulations

The federal Occupational Safety and Health Administration (OSHA) issued regulations about on-the-job exposure to bloodborne pathogens. OSHA determined that employees are at risk when they are exposed to blood or other potentially infectious material. Employers should follow OSHA requirements regarding job-related exposure to bloodborne pathogens, which are designed to protect you from disease transmission. This includes reducing or removing hazards from the workplace that may place employees in contact with infectious materials, including how to safely dispose of needles.

OSHA regulations and guidelines apply to employees who may come into contact with blood

or other body substances that could cause an infection. These regulations apply to lifeguards because, as professional rescuers, lifeguards are expected to provide emergency care as part of their job. OSHA has revised the regulations to include the requirements of the federal Needlestick Safety and Prevention Act. These guidelines can help lifeguards and their employers meet the OSHA bloodborne pathogens standard to prevent transmission of serious diseases. For more information about the OSHA Bloodborne Pathogens Standard 29 CFR 1910.1030, go to osha.gov.

## EMPLOYERS' RESPONSIBILITIES

OSHA's regulations on bloodborne pathogens require employers to protect employees in specific ways, including:

- Identifying positions or tasks covered by the standard.
- Creating an exposure control plan to minimize the possibility of exposure and making the plan easily accessible to employees.
- Developing and putting into action a written schedule for cleaning and decontaminating the workplace.
- Creating a system for easy identification of soiled material and its proper disposal.
- Developing a system of annual training for all covered employees.
- Offering the opportunity for employees to get the hepatitis B vaccination at no cost to them.
- Establishing clear procedures to follow for reporting an exposure.
- Creating a system of recordkeeping.
- Soliciting input from nonmanagerial employees in workplaces where there is potential exposure to injuries from contaminated sharps regarding the identification, evaluation and selection of effective engineering and work practice controls.
- Recording the appropriate information about needlestick injuries in the sharps injury log, including:
  - Type and brand of device involved in the incident
  - Location of the incident
  - Description of the incident
- Maintaining a sharps injury log in a way that protects the privacy of employees.
- Ensuring confidentiality of employees' medical records and exposure incidents.

## Exposure Control Plan

OSHA regulations require employers to have an exposure control plan. This is a written program outlining the protective measures that employers will take to eliminate or minimize employee exposure incidents and how to respond should an exposure occur. The plan also should detail how the employer will meet other OSHA requirements, such as recordkeeping. The exposure control plan guidelines should be made available to lifeguards and other personnel who may come into contact with blood or other potentially infectious materials and should specifically explain what they need to do to prevent the spread of infectious diseases.

## Standard Precautions

Standard precautions are safety measures that combine universal precautions and **body substance isolation (BSI) precautions** and are based on the assumption that all body fluids may be infectious. Standard precautions can be applied through the use of:

- Personal protective equipment (PPE).
- Good hand hygiene.
- Engineering controls.
- Work practice controls.
- Proper equipment cleaning.

### Personal Protective Equipment

PPE appropriate for your job duties should be available at your workplace and should be identified in the exposure control plan. PPE includes all specialized clothing, equipment and supplies that prevent direct contact with infected materials (Figure 7-6). These include, but are not limited to: breathing barriers, nitrile latex-free disposable (single-use) gloves, gowns, masks, shields and protective eyewear (Table 7-2).

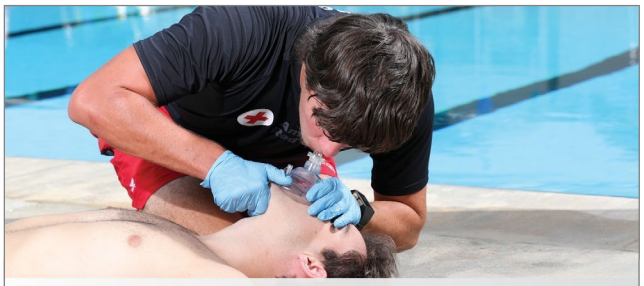


Figure 7-6 | Personal protective equipment includes breathing barriers and gloves.

Table 7-2: **Recommended Personal Protective Equipment Against Hepatitis B, Hepatitis C and HIV Transmission in Prehospital Settings**

| Task or Activity | Disposable Gloves | Gown Mask | Infectious Material | Protective Eyewear |
|---|---|---|---|---|
| Bleeding control with spurting blood | Yes | Yes | Yes | Yes |
| Bleeding control with minimal bleeding | Yes | No | No | No |
| Emergency childbirth | Yes | Yes | Yes | Yes |
| Oral/nasal suctioning; manually clearing airway | Yes | Yes | Yes | Yes |
| Handling and cleaning contaminated equipment and clothing | Yes | No, unless soiling is likely | No | No |

Guidelines for using PPE to prevent infection include the following:

- Avoid contact with blood and other potentially infectious material.
- Use CPR breathing barriers when giving ventilations to a victim.
- Wear nitrile latex-free disposable gloves when providing care:
  - Do not use gloves that are discolored, torn or punctured. Do not clean or reuse disposable gloves.
  - Cover any cuts, scrapes or sores, and remove jewelry, including rings, before wearing gloves, if possible.
  - Avoid handling items such as pens, combs or radios when wearing soiled gloves.
  - Change gloves before providing care to a different victim.
- In addition to gloves, wear protective coverings, such as a mask, eyewear and a gown, when there is a likelihood of coming into contact with blood or other body fluids that may splash.
- Remove gloves without contacting the soiled part of the gloves, and dispose of them in a proper container. See the skill sheet located at the end of the chapter for steps to remove gloves properly.

> ***Tip:*** *To put gloves on with wet hands if near the pool, fill the gloves with water and place your hand inside the glove.*

## Hand Hygiene

Hand washing is the most effective measure to prevent the spread of infection. Wash your hands before and after providing care, if possible, so that they do not pass pathogens to or from the victim. Wash your hands frequently, such as before and after eating, after using the restroom and every time you have provided care. By washing hands often, you can wash away disease-causing germs that have been picked up from other people, animals or contaminated surfaces.

To wash your hands correctly, follow these steps:

1. Wet your hands with warm water.
2. Apply soap to your hands.
3. Rub your hands vigorously for at least 15 seconds, covering all surfaces of your hands and fingers, giving added attention to fingernails and jewelry.
4. Rinse your hands with warm, running water.
5. Dry your hands thoroughly with a disposable towel.
6. Turn off the faucet using the disposable towel.

Alcohol-based hand sanitizers and lotions allow you to cleanse your hands when soap and water are not readily available and your hands are not visibly soiled. If your hands contain visible matter, use soap and water instead. When using an alcohol-based hand sanitizer:

- Apply the product to the palm of one hand.
- Rub your hands together.
- Rub the product over all surfaces of your hands, including nail areas and between fingers, until the product dries.
- Wash your hands with anti-bacterial hand soap and water as soon as they are available.

In addition to washing your hands frequently, it is a good idea to keep your fingernails shorter than one-fourth inch and avoid wearing artificial nails.

## Engineering Controls and Work Practice Controls

**Engineering controls** are objects used in the workplace that isolate or remove a hazard, thereby reducing the risk of exposure. Examples of engineering controls include:

- Biohazard bags and labels
- PPE

- Sharps disposal containers (Figure 7-7)
- Safer medical devices, such as sharps with engineered injury protections or needleless systems

**Work practice controls** are methods of working that reduce the likelihood of an exposure incident by changing the way a task is carried out. Examples of work practice controls include:

- Dispose of sharp items (e.g., broken glass) in puncture-resistant, leak-proof, labeled containers.
- Avoid splashing, spraying and splattering droplets of blood or other potentially infectious materials when performing all procedures.
- Remove and dispose of soiled protective clothing as soon as possible.
- Clean and disinfect all equipment and work surfaces soiled by blood or other body fluids.
- Use good hand hygiene.
- Do not eat, drink, smoke, apply cosmetics or lip balm, handle contact lenses or touch the eyes, mouth or nose when in an area where exposure to infectious materials is possible.
- Isolate contaminated areas so other employees or people do not walk through and become exposed.

Be aware of any areas, equipment or containers that may be contaminated. Biohazard warning labels are required on any container holding contaminated materials, such as used gloves, bandages or trauma dressings. Signs should be posted at entrances to work areas where infectious materials may be present.

## Equipment Cleaning and Spill Clean-Up

After providing care, you should clean and disinfect the equipment and surfaces. In some cases, you will need to properly dispose of certain equipment. Handle all soiled equipment, supplies and other materials with care until they are properly cleaned and disinfected (Figure 7-8). Place all used disposable items in labeled containers. Place all soiled clothing in marked plastic bags for disposal or washing (Figure 7-9). Commercial blood spill kits are available.

Take the following steps to clean up spills:

- Wear disposable gloves and other PPE, such as eye protection.
- Clean up spills immediately, or as soon as possible, after the spill occurs.
- Rope off or place cones around the area so others do not accidentally get exposed by walking through the spill.
- If the spill is mixed with sharp objects, such as broken glass and needles, do not pick these up with your hands. Use tongs, a broom and dustpan or two pieces of cardboard.
- Flood the area with a fresh disinfectant solution of approximately 1½ cups of liquid chlorine bleach to 1 gallon of water (1 part bleach per 9 parts water, or about a 10 percent solution), and allow it to stand for at least 10 minutes.
- Use appropriate material to absorb the solution, and dispose of it in a labeled biohazard container.
- Scrub soiled boots, leather shoes and other leather goods, such as belts, with soap, a brush and hot water. If you wear a uniform to work, wash and dry it according to the manufacturer's instructions.

Figure 7-7 | Sharps disposal container

Figure 7-8 | Clean and disinfect all equipment after use.

Figure 7-9 | Use a biozhazard bag to dispose of soiled materials.

# 7-4 IF YOU ARE EXPOSED

If you are exposed to a bloodborne pathogen, immediately take the following steps:

- Clean the contaminated area thoroughly with soap and water. Wash needlestick injuries, cuts and exposed skin.
- If you are splashed with blood or other potentially infectious material around your mouth or nose, flush the area with water.
- If your eyes are involved, irrigate them with clean water, saline or sterile irrigants for 20 minutes.

Following any exposure incident:

- Report the exposure incident to the appropriate supervisor immediately and to the EMS personnel when they take over the care of the victim. This step can be critical to receive appropriate post-exposure treatment.
- Document what happened. Include the time and date of the exposure, as well as the circumstances of the exposure, any actions taken after the exposure and any other information required by your employer.
- Seek immediate follow-up care as identified in your facility exposure control plan.

# 7-5 GENERAL PROCEDURES FOR INJURY OR SUDDEN ILLNESS ON LAND

If someone is suddenly injured or becomes ill, activate the facility's emergency action plan (EAP). Use appropriate first aid equipment and supplies, and follow these general procedures:

1. Size up the scene.
    - Only move the victim if necessary for their safety.
2. Perform a primary assessment.
    - Obtain consent if the victim is responsive.
3. Summon EMS, if needed and not already done.
4. Perform a secondary assessment, if no life-threatening conditions are found.
5. Provide care for the conditions found.
6. Report, advise and release.

## Size Up the Scene

When you size up the scene, your goal is to determine if the scene is safe for you, other lifeguards, EMS personnel, the victim(s) and any bystanders. You should:

- Use your senses to check for hazards that could present a danger to you or the victim, such as unusual odors that would indicate a gas leak or fire, sights that would indicate anything out of the ordinary or sounds, such as an explosion.
- Use appropriate PPE.
- Determine the number of injured or ill victims.
- Determine the nature of the illness or what caused the injury. Look for clues as to what may have caused the emergency and how the victim became ill or injured.
- Form an initial impression that may indicate a life-threatening emergency, including unresponsiveness or severe bleeding.
- Determine what additional resources may be needed.

If the scene appears to be unsafe, move to a safe distance, notify additional members of the safety team and wait for their arrival.

***To form an initial impression, look for signs that may indicate a life-threatening emergency:***

- Does the victim look sick?
- Is the victim awake and moving?

***Signs that may indicate a life-threatening emergency might consist of:***

- Unresponsiveness.
- Abnormal skin color.
- Severe life-threatening bleeding.

If you see severe life-threatening bleeding, use any available resources to control the bleeding, including a tourniquet or hemostatic dressing, if one is available and you are trained.

### Moving a Victim

When an emergency occurs in the water, you must remove the victim from the water so that you can provide care. However, for emergencies on land, you should care for the victim where they are found.

Ideally, when a victim is on land, you should move them only after you have conducted an assessment and provided care. Needlessly moving a victim can lead to further pain and injury.

Move an injured victim on land only if:

- You are faced with immediate danger.
- You need to get to other victims who have more serious injuries or illnesses.
- It is necessary to provide appropriate care (e.g., moving a victim to the top or bottom of steps to perform CPR).

If you must leave a scene to ensure your personal safety, you must make all attempts to move the victim to safety as well.

## EMERGENCY MOVES

Your safety is of utmost importance. Lifting and moving a victim requires physical strength and a high level of fitness. If you improperly lift a victim, you can permanently injure yourself or further injure the victim.

When moving a victim, consider the victim's height and weight, your physical strength, obstacles such as steps and narrow passages, the distance the victim needs to be moved, the availability of others to assist, the victim's condition and the availability of transport aids.

To improve your chances of successfully moving a victim without injuring yourself or the victim:

- Lift with your legs, not your back. Keep your legs shoulder-width apart, head up, back straight and shoulders square.
- Avoid twisting or bending anyone who has a possible head, neck or spinal injury.
- Do not move a victim who is too large for you to move comfortably.
- Walk forward, when possible, taking small steps, and look where you are going.

There are several ways to move a victim.

Non-emergency moves include:

- **Walking Assist.** Either one or two responders can use the walking assist for a responsive person who simply needs assistance to walk to safety.
- **Two-Person Seat Carry.** The two-person seat carry requires a second responder. This carry can be used for any person who is responsive and not seriously injured.

Emergency moves include:

- **Clothes Drag.** The clothes drag can be used to move a responsive or unresponsive person suspected of having a head, neck or spinal injury. This move helps to keep the person's head, neck and back stabilized.
- **Pack-Strap Carry.** The pack-strap carry can be used with responsive and unresponsive people. Using this carry with an unresponsive person requires a second responder to help position the injured or ill person on your back.

# Perform a Primary Assessment

Following the scene size-up, including forming an initial impression, conduct a primary assessment to determine if the victim has any life-threatening conditions and, if so, summon EMS personnel if a call has not already been made. The primary assessment includes checking the victim for responsiveness, breathing and a pulse.

## Check the Victim for Responsiveness

A person who can speak is responsive, but may not be alert. Remember, if a person is responsive and alert, you must obtain consent before providing care. Document any refusal of care by the victim on an incident or rescue report. If a witness is available, have them listen, and document in writing, any refusal of care.

If an adult or child appears to be unresponsive, shout, "Are you okay?" Use the person's name, if you know it. Then tap the victim on the shoulder and again shout, "Are you okay?" in a shout-tap-shout sequence. If an infant appears to be unresponsive, follow the same shout-tap-shout sequence, but tap the infant's foot to see if

they respond. A response may be subtle, such as some slight movement or momentary eye opening that occurs when you speak to the victim or apply a stimulus, such as a tap to the shoulder.

Use the mnemonic AVPU to help you determine the level of consciousness:

**A** – **Alert**—fully awake, but may still be confused
**V** – **Verbal**—responds to verbal stimuli
**P** – **Painful**—responds to painful stimuli
**U** – **Unresponsive**—does not respond

If the victim is not awake, alert and oriented or does not respond, call EMS if you have not already done so.

## Summon EMS Personnel

If you are unsure of the victim's condition or notice that the condition is worsening, summon EMS personnel. As a general rule, summon EMS personnel if victims experience any of the following conditions:

- Unresponsive or an altered level of consciousness (LOC), such as drowsiness or confusion
- Breathing problems (difficulty breathing or no breathing)
- Water inhalation after being recovered from under water
- Chest pain, discomfort or pressure lasting more than a few minutes, that goes away and comes back or that radiates to the shoulder, arm, neck, jaw, stomach or back
- Persistent abdominal pain or pressure
- No pulse
- Severe life-threatening bleeding
- Vomiting blood or passing blood
- Severe (critical) burns
- Suspected poisoning
- Seizures in the water
- Seizures on land, unless the person is known to have periodic seizures; if not, summon EMS personnel for a seizure on land if:
  - This is the person's first seizure.
  - The seizure lasts more than 5 minutes.
  - The person has repeated seizures with no sign of gaining lucidity.
  - The person appears to be injured.
  - The cause of the seizure is unknown.
  - The person is pregnant.
  - The person is known to have diabetes.
  - The person fails to regain responsiveness after the seizure.
- Suspected or obvious injuries to the head, neck or spine
- Stroke
- Painful, swollen, deformed areas (suspected broken bone) or an open fracture above the hands or feet
- Condition is unclear or worsening

## Open the Airway and Check for Breathing and Pulse

If the victim does not respond, open the victim's airway and quickly check for breathing and a pulse for at least 5 seconds, but not more than 10 seconds (Figure 7-10). Perform these tasks simultaneously. If a victim is able to speak, the airway is functional, and they are breathing. However, even if a victim can speak, you must continue to assess breathing, because breathing status, rate and quality can change suddenly.

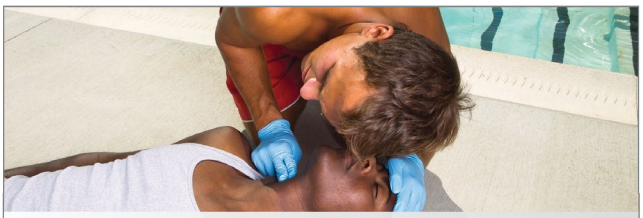


Figure 7-10 | When performing a primary assessment, open the victim's airway and check for breathing and a pulse simultaneously for at least 5 seconds, but no more than 10 seconds.

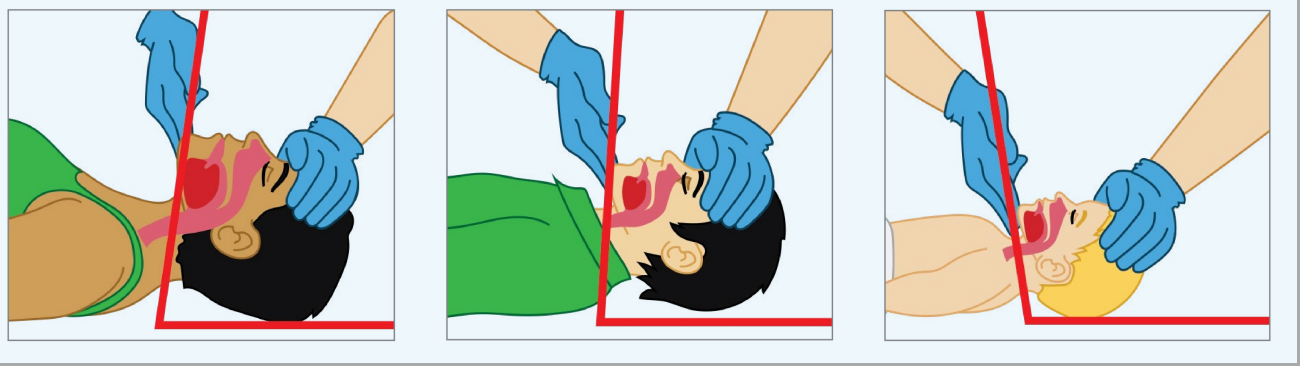
### Opening the Airway

When a victim is unresponsive, the tongue relaxes and can block the flow of air through the airway, especially if the victim is lying on their back. To check for breathing and give ventilations, you must manually tilt the head or thrust the jaw to move the tongue away from the back of the throat. The method used to open the airway depends on the number of rescuers responding, the position of the rescuer to the victim and whether you suspect the victim has an injury to the head, neck or spine. You can open the airway from a position either to the side of the victim or above the victim's head, using the following techniques:

- From the victim's side: Use the head-tilt/chin-lift.
- From above the victim's head: Tilt the head back using the jaw-thrust maneuver.
  - When the victim is suspected of having an injury to the head, neck or spine, use the jaw-thrust (without head extension) maneuver.

For a child, tilt the head slightly past the neutral position, but not as far as you would for an adult. For an infant, tilt the head to the neutral position (Table 7-3).

Table 7-3: **Head Positions for Giving Ventilations to an Adult, a Child and an Infant**



### Checking for Breathing

To check for breathing, position your ear over the mouth and nose so that you can hear and feel air as it escapes while you look for the chest to rise and fall. Normal, effective breathing is regular, quiet and effortless. Isolated or infrequent gasping in the absence of other breathing in an unresponsive person may be agonal breaths, which can occur even after the heart has stopped beating. Be aware that this is not normal breathing. **Agonal breaths** are a sign of cardiac arrest. In this situation, care for the victim as though they are not breathing at all.

### Checking for a Pulse

With every heartbeat, a wave of blood moves through the blood vessels. This creates a beat called the pulse. You can feel it with your fingertips in the arteries near the skin. Sometimes the pulse may be difficult to find, since it may be slow or weak. If you do not find a pulse within 10 seconds, do not waste any more time attempting to find one. Assume that there is no pulse, and begin care immediately.

To check for a pulse:

- For an adult or child, feel for a carotid pulse by placing two fingers in the middle of the victim's throat and then sliding them into the groove at the side of the victim's neck closest to you. Press in lightly; pressing too hard can compress the artery.
- For an infant, feel for the brachial pulse on the inside of the upper arm between the infant's elbow and shoulder. Press in lightly; pressing too hard can compress the artery.

### Give 2 Ventilations if Appropriate

- For an unresponsive person who is not breathing and does not have a pulse, it is necessary to immediately begin CPR with chest compressions. However, in certain situations, such as drowning, giving ventilations before beginning CPR is important.
- If you find a victim who is unresponsive and not breathing and has no pulse as a result of drowning, you should give the victim 2 ventilations before starting compressions. (See Chapter 8 for further information on breathing emergencies.) Each one should be a quality ventilation that makes the victim's chest clearly rise. If these ventilations do not make the victim's chest clearly rise, re-tilt and attempt another ventilation.
- However, if the victim is not breathing, does not have a pulse and was not in the water, you should assume that the problem is a cardiac emergency. In this case, begin CPR with chest compressions. (See Chapter 9 for more on cardiac emergencies.)

### Using a Resuscitation Mask to Give Ventilations

You should use a resuscitation mask when giving ventilations, if one is available (Figure 7-11). To ensure that you are giving adequate ventilations, the mask must be properly placed and sealed over the victim's mouth and nose. Each ventilation should last about 1 second and make the victim's chest begin to rise. Be careful not to overventilate the victim by blowing too long or too forcefully. Once you see chest movement, you have given adequate ventilation. Overventilation can cause gastric distention—air in the stomach—which results in vomiting. It can also increase the pressure in the chest, making CPR ineffective.

To use a resuscitation mask to give ventilations:

- Position yourself at the victim's head, either on the victim's side or above the head.
- Position the mask over the victim's mouth and nose, using both hands to hold the mask in place to create an airtight seal.
- If you are on the victim's side, tilt the victim's head back while lifting the chin. If you are behind the victim's head, tilt the head back and lift the jaw. For a victim with a suspected head, neck or spinal injury, use the jaw-thrust (without head extension) maneuver.
- Blow into the one-way valve, ensuring that you can see the chest rise. Each ventilation should last about 1 second, with a brief pause between breaths to let the exhaled breath escape.

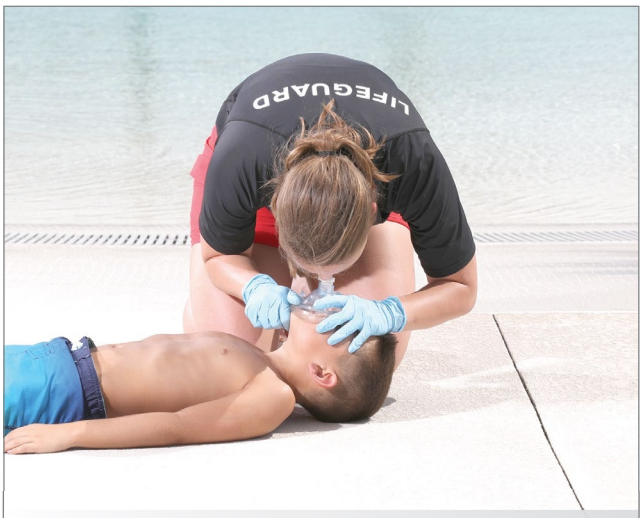



Figure 7-11 | Use a resuscitation mask when giving ventilations.

## Recovery Positions

If a victim is unresponsive but breathing and you do not suspect a head, neck or spinal injury, place the victim in a side-lying recovery position. If you suspect a head, neck or spinal injury, leave the victim in a face-up position unless you are unable to maintain an open airway because of fluids or vomit or if you are alone and have to leave the victim (e.g., to call for help); in these cases, a side-lying recovery position will help to keep the airway open and clear.

## Perform a Secondary Assessment

If you are certain that the victim does not have any immediate life-threatening conditions, you should perform a secondary assessment to identify any additional problems. The secondary assessment provides additional information about injuries or conditions that may require care and could become life-threatening if not addressed. (See Chapter 10 for more information on injuries, illnesses and performing a secondary assessment.)

## CALL FIRST OR CARE FIRST?

If you are alone when responding to someone who is ill, you must decide whether to Call First or Care First.

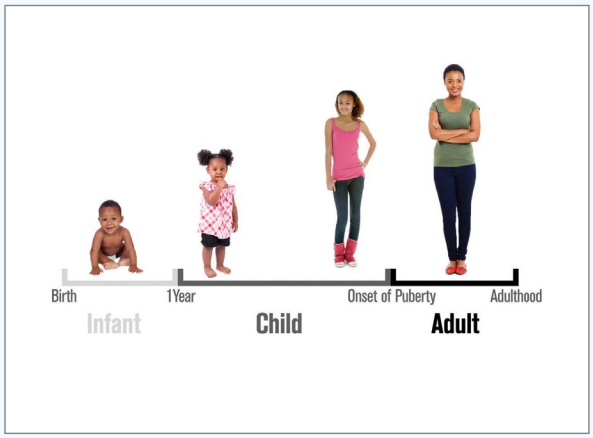
If you are ALONE:

- **Call First** (call 9-1-1 or the designated emergency number before providing care) for:
  - Any adult or child about 12 years of age or older who is unresponsive.
  - A child or an infant whom you witnessed suddenly collapse.
  - An unresponsive child or infant known to have heart problems.
- **Care First** (provide 2 minutes of care, and then call 9-1-1 or the designated emergency number) for:
  - An unresponsive child (younger than about age 12) whom you did not see collapse.
  - Any victim suspected of drowning.

Call First situations are likely to be cardiac emergencies in which time is a critical factor. In Care First situations, the conditions often are related to breathing emergencies.

## WHEN IS A CHILD A CHILD?

In most instances, determining whether to treat a child as a child or as an adult has been based on age. Typically, an adult is defined as someone about the age of 12 (adolescent) or older; someone between the ages of 1 and 12 has been considered to be a child for CPR care; and an infant is someone younger than 1 year of age. However, for the purposes of this course, a child is defined as the age of 1 to the onset of puberty, as evidenced by breast development in girls and underarm hair development in boys. An infant is considered under the age of 1 year.



## Provide Care for the Conditions Found

Provide care for the conditions found during the primary and secondary assessments. Always treat life-threatening situations first. Other lifeguards and/or safety team members should assist as outlined in the EAP, either by getting equipment and summoning EMS personnel or in the actual delivery of care, such as giving two-rescuer CPR and using an AED. Care should be continued until EMS personnel take over, if needed.

## Report, Advise and Release

Once appropriate care is given, be sure to complete incident report forms, advise the victim on next steps and release the victim to the appropriate parties.

# 7-6 WRAP-UP

As a professional lifeguard, you are an important link in the EMS system and have a duty to act and to meet professional standards. One of these standards is taking appropriate precautions to protect yourself and others against the transmission of infectious diseases. You also should be familiar with and always follow the general procedures for responding to injury or sudden illness on land. These procedures include activating the EAP, sizing up the scene, performing an initial assessment, summoning EMS personnel by calling 9-1-1 or the designated emergency number and, after caring for any life-threatening injuries, performing a secondary assessment.

## BENCHMARKS FOR LIFEGUARDS

Lifeguards should:

- Have familiarity with and the ability to operate facility-specific rescue equipment, including resuscitation masks and BVMs.
- Expect to be equipped with and ready to use:
  - Personal protective equipment.
  - Lifeguarding rescue equipment.
  - Resuscitation equipment, including resuscitation masks, BVMs and oxygen equipment.
- Obtain consent, identifying themselves as trained responders.
- Conduct a primary assessment for timely determination of a victim's level of consciousness, breathing and pulse.

## BENCHMARKS FOR LIFEGUARDING OPERATIONS

Managers should ensure that lifeguards are equipped with:

- Protective equipment.
- Lifeguarding rescue equipment.
- Resuscitation equipment, including resuscitation masks and BVMs.

# Chapter 7 Review

**1. Touching soiled dressings that are contaminated with potentially infectious material is an example of:**

**A** | Indirect contact

**B** | Direct contact

**C** | Droplet contact

**D** | Vector-borne contact

**2. Examples of work practice controls include:**

**A** | Disposing of sharp items in a puncture resistant, leak-proof, labeled container

**B** | Removal and proper disposal of soiled protective clothing as soon as possible

**C** | Cleaning/disinfecting all equipment and work surfaces possibly soiled by blood or other potentially infectious material

**D** | All of the above

**3. The OSHA recommended solution to use for disinfecting contaminated or soiled equipment and surfaces is:**

**A** | 4 cups of bleach per gallon of water

**B** | 1 cup of ammonia per gallon of water

**C** | 1/4 cup of antibacterial soap per gallon of water

**D** | 1 part bleach per 9 parts of water

**4. Place the following general procedures for injury or sudden illness on land in order:**

_____ Perform a primary assessment.

_____ Provide care for the conditions found.

_____ Summon EMS, if needed and not already done.

_____ Size up the scene.

_____ Report, advise and release.

_____ Perform a secondary assessment.

# Chapter 7 Review

**5. Describe six actions you should take or determinations that you should make while performing a scene size-up:**

1)

2)

3)

4)

5)

6)

**6. Provide a situation and specific example of when you should move a victim who is on land.**

# Chapter 7 Review

**7. If you are alone when responding to someone who is ill, you must decide whether to Call First or Care First.**

**When should you Call First?**

**When should you Care First?**

**8. How do you tell the difference between an adult, a child, and an infant?**

**Adult:**

**Child:**

**Infant:**

**9. During the primary assessment, you find the victim is not breathing and has no pulse. When would you give 2 ventilations before starting CPR?**

# REMOVING DISPOSABLE GLOVES

## Removing Disposable Gloves

*Note: To remove gloves without spreading germs, never touch your bare skin with the outside of either glove.*

**1** Pinch the glove.

- Pinch the palm side of one glove on the outside near your wrist.
- Pull the glove toward your fingertips, turning it inside out as you pull it off your hand.


**2** Slip two fingers under the glove.

- Hold the removed glove in the palm of your gloved hand.
- Carefully slip two fingers under the glove at the wrist of the remaining gloved hand.

**3** Pull the glove off.

- Pull the glove toward your fingertips, turning it inside out as you pull it off your hand.
- The other glove is now contained inside the first glove.


**4** Dispose of gloves and wash hands.

- Dispose of gloves and any other PPE in a proper biohazard container.
- Wash your hands thoroughly with soap and running water, if available. Otherwise, rub hands thoroughly with an alcohol-based sanitizer if hands are not visibly soiled.

# USING A RESUSCITATION MASK

## Head-Tilt/Chin-Lift

*Note: Always select the appropriately sized mask for the victim.*

1. Kneel to the side of the victim's head.

2. Position the mask.
   - Place the mask over the mouth and nose of the victim starting from the bridge of the nose.
   - Place the bottom of the mask below the mouth to the chin (the mask should not extend past the chin).

3. Seal the mask.
   - Place the thumb and fingers of one hand around the top of the mask. Your remaining fingers can rest on the side of the victim's face.
   - Place the thumb of your other hand (the hand closest to the victim's chest) on the bottom of the mask and slide your first two fingers onto the bony part of the victim's chin.
   - Press downward on the mask with your top hand and the thumb of your lower hand to seal the top and bottom of the mask.

4. Tilt the victim's head back and lift the chin to open the airway.

5. Blow into the mask.
   - Each ventilation should last about 1 second and make the chest clearly rise. The chest should fall before the next ventilation is given.

# USING A RESUSCITATION MASK

## Jaw-Thrust (With Head Extension) Maneuver

*Note: Always select the appropriately sized mask for the victim.*

1. Kneel above the victim's head.

2. Position the mask.
   - Place the mask over the mouth and nose of the victim starting from the bridge of the nose.
   - Place the bottom of the mask below the mouth to the chin (the mask should not extend past the chin).

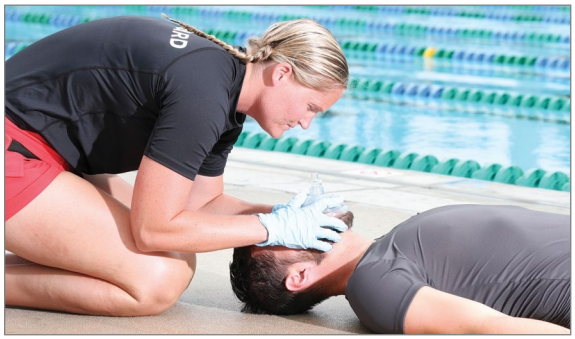
3. Seal the mask.
   - Place your thumbs and index fingers along each side of the resuscitation mask to create a "C."
   - Slide your 3rd, 4th and 5th fingers into position to create an "E" on both sides of the victim's jawbone.
   - Hold the mask in place while you tilt the head back and lift the jaw into the mask.

4. Blow into the mask.
   - Each ventilation should last about 1 second and make the chest clearly rise. The chest should fall before the next ventilation is given.

# USING A RESUSCITATION MASK

## Jaw-Thrust (Without Head Extension) Maneuver

*Note: Always select the appropriately sized mask for the victim.*



1. Kneel above the victim's head.

2. Position the mask.
   - Place the mask over the mouth and nose of the victim starting from the bridge of the nose.
   - Place the bottom of the mask below the mouth to the chin (the mask should not extend past the chin).

3. Seal the mask.
   - Place your thumbs and index fingers along each side of the resuscitation mask to create a "C."
   - Slide your 3rd, 4th and 5th fingers into position to create an "E" on both sides of the victim's jawbone.
   - Without moving or tilting the head back, lift the lower jaw up with your fingers along the jawbone to seal the mask to the face.

4. Blow into the mask.
   - Each ventilation should last about 1 second and make the chest clearly rise. The chest should fall before the next ventilation is given.

# MOVING A VICTIM–EMERGENCY MOVES

## Pack-Strap Carry

*Note: Do not use this carry for a victim suspected of having a head, neck or spinal injury.*

1. Have the victim stand or have a second rescuer support the victim in a standing position.
2. Position yourself with your back to the victim. Keep your back straight and knees bent so that your shoulders fit into the victim's armpits.
3. Cross the victim's arms in front of you and grasp the victim's wrists.
4. Lean forward slightly and pull the victim up and onto your back.
5. Stand up and walk to safety.

## Clothes Drag

*Note: The clothes drag is an appropriate emergency move for a responsive or unresponsive victim suspected of having a head, neck or spinal injury.*

1. Position the victim on their back.
2. Kneel behind the victim's head and gather the victim's clothing behind his their neck.
3. Pull the victim to safety, cradling the victim's head with their clothes and your hands.

# MOVING A VICTIM–NON-EMERGENCY MOVES

*Note: Do not use these non-emergency moves for a victim suspected of having a head, neck or spinal injury.*

## Walking Assist

*Note: Either one or two lifeguards can use this method to move a victim who needs assistance walking.*

1. Stand at one side of the victim, place the victim's arm across your shoulders and hold it in place with one hand.
2. Support the victim with your other hand around the victim's waist.
3. Walk the victim to safety.

## Two-Person Seat Carry

1. Put one arm under the victim's thighs and the other across the victim's back and under the victim's arms. Have a second responder do the same.
2. Interlock your arms with those of a second rescuer under the victim's legs and across the victim's back.
3. Have the victim place their arms over both rescuers' shoulders.
4. Lift the victim in the "seat" formed by the rescuers' arms and carry the victim to safety.

# PRIMARY ASSESSMENT–ADULT, CHILD AND INFANT

## Primary Assessment–Adult, Child and Infant

*Note: Activate the EAP and get an AED on the scene as soon as possible.*

**1** Size up the scene while forming an initial impression:

- Use your senses to check for hazards that could present a danger to you or the victim.
- Use appropriate PPE.
- Determine the number of injured or ill victims.
- Determine what caused the injury or the nature of the illness. Look for clues to what may have caused the emergency and how the victim became ill or injured.
- Form an initial impression that may indicate a life-threatening emergency, including responsiveness or severe bleeding.
- Does the victim look sick? Are they awake and moving?
- Determine what additional resources may be needed.

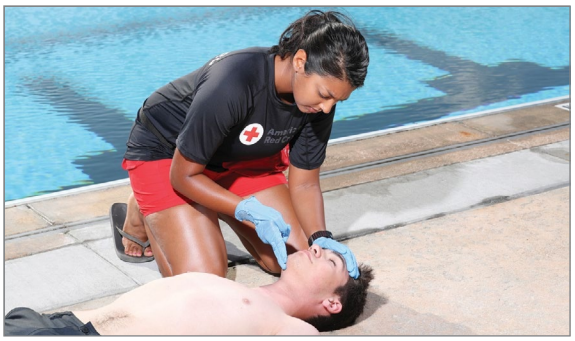
*Note: If you see severe life-threatening bleeding, use any available resources to control the bleeding including a tourniquet if one is available and you are trained.*

**2** Check for responsiveness.

- Shout, "Are you okay?" (use the person's name if you know it) then tap the victim on the shoulder and shout, "Are you okay?" again in a shout-tap-shout sequence.
  - For an infant, tap the foot.

**3** If no response, summon EMS personnel, if you have not already done so.

- If the victim is face-down, roll the victim onto their back while supporting the head, neck and back.

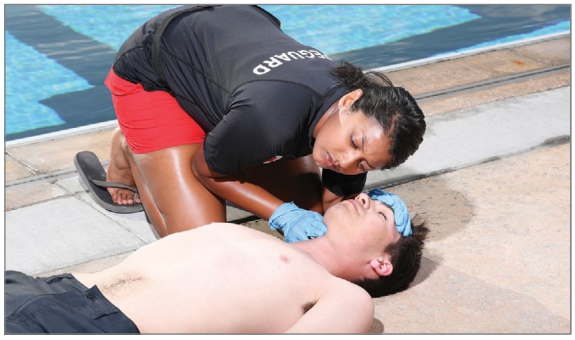


**4** Perform a primary assessment, open the airway and simultaneously check for breathing and a pulse for at least 5 seconds, but no more than 10 seconds.

- To open the airway:
  - From the side, use the head-tilt/chin-lift technique.
  - From above the victim's head, use the jaw-thrust (with head extension) maneuver.
  - If a head, neck or spinal injury is suspected, use the jaw-thrust (without head extension) maneuver.

## Primary Assessment–Adult, Child and Infant *continued*

- Look, listen and feel for breathing and pulse simultaneously.
  - For an adult or child, feel for a carotid pulse by placing two fingers in the middle of the victim's throat and then sliding them into the groove at the side of the neck closest to you. Press lightly.
  - For an infant, feel for the brachial pulse on the inside of the upper arm between the infant's elbow and shoulder. Press lightly.



**5** Give two ventilations **ONLY IF** the victim is not breathing as the result of a drowning.

- If the chest does not clearly rise when attempting the first 2 ventilations, re-tilt the head and try to give another ventilation.
- If after the second attempt the chest clearly rises, give 1 more ventilation so there are two successful ventilations.
- If after the second attempt, the chest does not clearly rise, immediately begin CPR.

**6** Provide appropriate care.

- If the victim is not breathing but has a pulse, give ventilations.
  - Adult: Give 1 ventilation about every 5-6 seconds.
  - Child and Infant: Give 1 ventilation about every 3 seconds.
- If the victim is not breathing and has no pulse, begin CPR starting with compressions.
- If unresponsive but breathing and you do not suspect a head, neck or spinal injury, place the victim in a side-lying recovery position. To place the victim in a recovery position:
  - Raise the victim's arm that is closest to you.
  - Roll the victim toward you so that their head rests on their extended arm.
  - Bend the victim's knees to stabilize their body.


SINGLE
PATIENT USE