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AMERICAN SAFETY & HEALTH INSTITUTE

Pediatric

CPR, AED, and First Aid

Student Handbook Preview

AMERICAN SAFETY & HEALTH INSTITUTE

Pediatric
CPR, AED, and First Aid
Student Handbook, *Version 7.0*

Purpose of this Handbook

This ASHI *Pediatric CPR, AED, and First Aid Version 7.0 Student Handbook* is solely intended to facilitate certification in an ASHI Pediatric CPR, AED and First Aid training class. The information in this handbook is furnished for that purpose and is subject to change without notice.

ASHI certification may only be issued when an ASHI-authorized Instructor verifies a student has successfully completed the required core knowledge and skill objectives of the program.

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Section 1 — The First Aid Provider

The First Aid Provider

Unintentional injury is the leading cause of death in the United States for children from 1 to 9 years of age. On average, 33 children die each day in the U.S. from traumatic injuries, and more than nine million children are seen in emergency departments for injuries each year.

Once an injury or sudden illness has occurred, effective first aid could make the difference between a rapid or prolonged recovery, a temporary or permanent disability, and even life or death.

According to the American Academy of Pediatrics, pediatric first aid is the immediate care given to a suddenly ill or injured child until the responsibility for the medical condition, and effort to prevent it from becoming worse, can be taken over by a medical professional, parent, or legal guardian. It does not take the place of proper medical treatment.

First aid for pediatric emergencies with a child-specific approach is more beneficial than a standardized adult-focused approach. When describing treatment guidelines for children:

- Someone younger than 1 year of age is referred to as an infant.
- Someone between 1 year and the onset of puberty is referred to as a child. The onset of puberty can be indicated by breast development in females and the presence of armpit hair in males.
- Anyone at or beyond puberty is considered an adult.

First aid does not require making complex decisions or having in-depth medical knowledge. It is easy to learn, remember, and perform.

A first aid provider is someone trained in the delivery of initial emergency procedures, using limited equipment to perform a primary assessment, and administering initial treatment until Emergency Medical Services, or EMS, personnel arrive.

The essential responsibilities of a first aid provider are:

- Recognizing a medical emergency,
- Making the decision to help,
- Identifying hazards and ensuring personal safety,
- Activating the EMS system, and
- Providing supportive, basic first aid care.

This program has been designed to give you specific information on how to manage an ill or injured child and the differences required in order to care for infants and adults. The goal of this training is to help you gain the knowledge, skills, and confidence necessary to manage a medical emergency until more advanced help is available.

Children and Emergencies

Organizations with staff members trained in pediatric first aid, including pediatric CPR, and a facility designed to ensure the safety of children reduce the potential for the death or injury of a child. Wherever children are commonly found, it is appropriate to have an adult trained to assess for and provide initial treatment for common pediatric injuries, illnesses, and life-threatening emergencies.

Age-Related Behaviors

Behavior at each stage of development also carries increased risk. An infant may turn over unexpectedly and fall if left unattended on a changing table, couch, or other high surface.

At three to six months of age infants begin putting things in their mouths. Their underdeveloped sense of taste and inability to recognize danger increases the risk of poisoning and choking.

As infants learn to move, they can encounter new and unexpected hazards. Toddlers love to independently walk, run, and explore. They can get into problems quickly, without warning.

The risk of injury increases as children learn to use new things such as bicycles, scooters, skates, and skateboards. Curiosity can lead to the risk of burns from matches, lighters, wood stoves, and ovens.

Disruption to Routine

Certain circumstances or disruptions in a child's routine can increase risk of a medical emergency. These can include traveling; a move to a new home; a busy holiday; when the child is hungry or thirsty; when someone other than the normal caregiver is taking care of the child; when the child is left unattended; when another family member is ill, or the caregiver is tired or stressed.

Communication

Another special consideration when providing first aid care for children is that communicating with a child is more difficult. Using child-friendly communication techniques can help you more effectively provide care. These include:

- Approaching the child slowly to keep from increasing his anxiety
- Kneeling or sitting at the child's level and maintaining a calm, confident tone while speaking to him
- Telling the child your name and asking for his, and then using his name during the course of your care
- Looking and talking to the child and involving him in making decisions
- Enlisting the aid of a parent or caregiver to help communicate with and comfort the child.

Child Abuse

Child abuse is any act that endangers or impairs a child's physical or emotional health and development. It may be physical violence, emotional injury, sexual abuse, or consistent neglect.

In the United States, a national child abuse hotline has been established. The phone number is 1-800-4ACHILD. For additional information you can visit online at www.childhelp.org.

Contact Information

Maintain current contact information on each child to include the following:

- Name
- Birth date
- Sex
- Date of admission
- Name and phone number of child's physician and dentist
- Dietary restrictions and allergies
- Signed and dated by the parent

Maintain the confidentiality and security of all the records for children.

Parental Notification

Whenever a child is seriously ill or injured, a parent or guardian should be contacted as soon as possible. However, never delay calling EMS to do so. Call EMS immediately any time you recognize an emergency exists or you believe a child needs professional medical attention.

Reassure the parent or guardian that a staff member will remain with the child until the parent or guardian assumes responsibility.

Mandated Reporting

In many jurisdictions, mandatory reporting exists for those individuals who suspect child abuse. Mandated reporters are required to report when, in the ordinary course of their employment or profession, they have reasonable cause to suspect or believe that a child under the age of 18 has been abused, neglected or is placed in imminent risk of serious harm. Check with your local city, county, or state government agencies to determine if mandatory reporting applies to you.

Section 2 — Sudden Cardiac Arrest

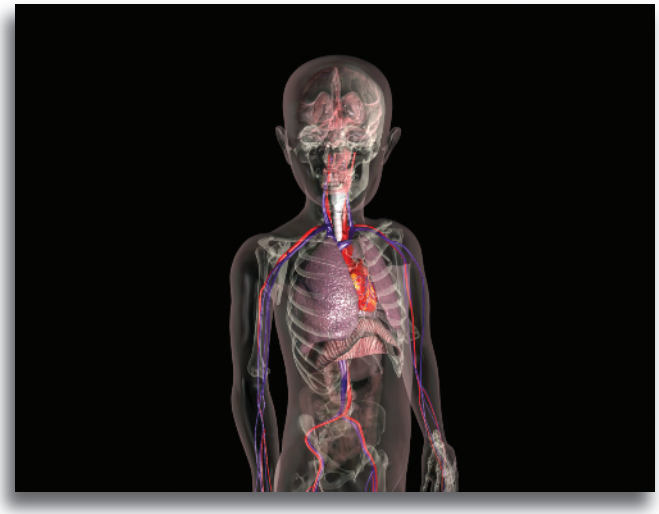
Respiratory and Circulatory Systems

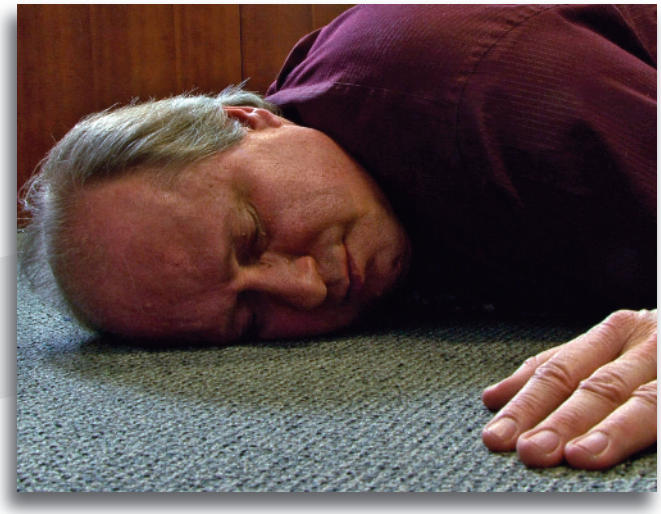
Because the human body cannot store oxygen, it must continually supply tissues and cells with oxygen through the combined actions of the respiratory and circulatory systems.

The respiratory system includes the lungs, and the "airway," the passage from the mouth and nose to the lungs. Expansion of the chest during breathing causes suction, which pulls outside air containing oxygen through the airway and into the lungs. Relaxation of the chest increases the pressure within the chest and forces air to be exhaled from the lungs.

The circulatory system includes the heart and a body-wide network of blood vessels. Electrical impulses stimulate mechanical contractions of the heart to create pressure that pushes blood throughout the body. Blood vessels in the lungs absorb oxygen from inhaled air. The oxygen-rich blood goes to the heart, then out to the rest of the body.

Large vessels called arteries carry oxygenated blood away from the heart. Arteries branch down into very small vessels that allow oxygen to be absorbed directly into body cells so it can be used for energy production. Veins return oxygen-poor blood back to the heart and lungs where the cycle repeats.





Sudden Cardiac Arrest

Sudden cardiac arrest, or SCA, can occur without warning, at any time. Mostly affecting adults, SCA occurs when the normal electrical activity in the heart unexpectedly becomes disorganized. The normally coordinated mechanical contraction of the heart muscle is lost, and a chaotic, quivering condition known as ventricular fibrillation can occur. Blood flow to the brain and body abruptly stops.

This lack of blood and oxygen to the brain causes a person to quickly lose consciousness, collapse, and stop breathing. Brain tissue is especially sensitive to a lack of oxygen. When oxygen is cut off, brain death can occur quickly, within a matter of minutes.

Without early recognition and care from a bystander, a person will not survive.

Cardiopulmonary resuscitation, or CPR, allows a bystander to restore some oxygen to the brain through a combination of chest compressions and rescue breaths. By itself, CPR is only a temporary measure that can buy time until more advanced care can be provided.

Additional Information

Sudden Cardiac Arrest in Children
Sudden cardiac arrest is much less likely to occur in a child, but can be caused by things such as existing heart conditions, electrical shock, or blunt blows to the chest.

Sudden Infant Death Syndrome (SIDS)
Sudden Infant Death Syndrome or SIDS is the sudden and unexplained death of a baby under one year of age. Because many SIDS babies are found in their cribs, it is often referred to as "crib death."

The exact cause of SIDS is not yet known, but it is the leading cause of death in babies after one month of age. Most deaths occur in babies who are between 2 and 4 months old.

Babies placed on their stomachs to sleep are much more likely to die of SIDS than babies placed on their backs.

For more information about SIDS and the National Institute of Child Health and Human Development's Back to Sleep campaign, visit http://www.nichd.nih.gov/sids/

Section 3 — Basic CPR Skills

Chest Compressions

If the heart stops, it is possible to restore at least some blood flow through the circulatory system by way of external chest compressions. The most effective chest compressions occur with the rhythmic application of downward pressure on the center of the chest.

External compressions increase pressure inside the chest and directly compress the heart, forcing blood to move from the heart to the brain and other organs.

Always compress fast and deep when performing compressions. Without losing contact, allow the chest to fully rebound at the top of each compression.

Blood pressure and flow is created and maintained with well-performed compressions. If compressions stop, blood pressure is quickly lost and has to be built up again. Minimize any interruptions when doing compressions.

When compressing properly, you may hear and feel changes in the chest wall. This is normal. Forceful external chest compression is critical if the person is to survive.

Skill Guide 2

Chest Compressions

Child

- Place heel of one hand on lower half of breastbone.
- Push hard, straight down at least 1⁄3 the diameter of the chest, or about 2 inches. Allow chest to fully rebound.
- Without interruption, push fast at a rate of at least 100 times per minute. Keep up the force.
- Compressions can be tiring. If desired, use two hands, as with adults.

Infant

- Place tips of two fingers on the breastbone just below the nipple line.
- Push hard, straight down at least 1⁄3 the diameter of the chest, or about 1 1⁄2 inches.
- Without interruption, push fast at a rate of at least 100 times per minute.

Adult

- Place heel of one hand on center of chest. Place heel of second hand on top of first.
- Push hard, straight down at least 2 inches. Lift hands and allow chest to fully rebound.
- Without interruption, push fast at a rate of at least 100 times per minute.

Section 4 — Basic Life Support Care

Unresponsive and Breathing

Even if a child is breathing normally, a lack of responsiveness is still considered to be a life-threatening condition that requires immediate care.

There are a variety of things that can result in unresponsiveness. Regardless of the cause, the greatest treatment concern is the ability of the child to maintain a clear and open airway.

Positioning an uninjured, unresponsive child in the recovery position can help maintain and protect the airway. This position uses gravity to drain fluids from the mouth and keep the tongue from blocking the airway.

If an unresponsive child has been seriously injured, do not move him unless you are alone and need to leave to get help.

Frequently assess the breathing of anyone placed in a recovery position. The condition can quickly become worse and require additional care.

Skill Guide 6

Unresponsive and Breathing — Recovery Position

Assess Child

- If safe, tap or squeeze shoulder. Ask loudly, "Are you okay?" ***No response!***
- Have someone alert EMS and get an AED.
- Look quickly at face and chest for normal breathing. ***Normal breathing present!***

Prepare

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

Roll

- Grasp shoulder and hip and roll child toward you. Roll in a single motion, keeping head, shoulders, and torso from twisting.
- Roll far enough for face to be angled forward.
- Position elbow and knee to stabilize head and body.

Suspected Injury

- If child has been seriously injured, do not move unless fluids are collecting in airway, or you are alone and need to leave to get help.
- During roll, make sure head ends up resting on extended arm and head, neck, and torso are inline.

Section 11 — Caring for Sudden Illness

Warning Signs of Sudden Illness

Medical conditions and illnesses can suddenly trigger an unexpected medical emergency. In general, suspect a serious illness when, without warning, a child suddenly appears weak, ill, or in severe pain.

In many cases, the human body displays warning signs to alert us to serious illness. A sudden onset of fever, headache, and stiff neck or a blood-red or purple rash can indicate the possibility of severe infection.

Other common warning signs of serious illness include:

- Altered mental status
- Breathing difficulty or shortness of breath
- Pain, severe pressure, or discomfort in the chest
- Severe abdominal pain

Early recognition and reaction to these warning signs can minimize the underlying problem and improve the overall outcome.

Additional Information

Meningitis

Meningitis can occur as a result of an infection of the fluid surrounding the brain and spinal cord. The infected fluid causes inflammation of the protective membranes around the brain and spinal cord. Common signs include a sudden onset of fever, headache, vomiting, and stiff neck.

Other Illness Considerations

- **Temperature Taking** — Body temperature elevation is a normal part of a body's defense against infection. Temperature can be measured in the mouth, rectum, armpit, or ear.
- **Fever Guidelines** — Fevers to note in children older than 4 months include 101°F orally, 102°F rectally, 100°F in armpit, and 101°F in ear. Get immediate medical attention when a child under 4 months old has an elevated temperature of 101°F rectally or 100°F in the armpit. Any fever in an infant under 2 months old should get medical attention within an hour.
- **Vomiting** — The biggest concern with vomiting is the protection of the airway. Other concerns include multiple episodes within 24 hours; association with a fever, stiff neck, or head injury; a green or bloody appearance; and association with a decreased volume of urine.
- **Diarrhea** — Concerns with diarrhea include difficulty in sanitation, blood or mucus in stool, abnormal color (very black or very pale), association with a decreased volume of urine, association with fever, and jaundice, or a yellow coloring to skin or eyes.

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