Chapter 31

Assisting With Emergency Care
First aid is the emergency care given to an ill or injured person before medical help arrives.

- The goals of first aid are to:
  - Prevent death
  - Prevent injuries from becoming worse

For emergencies in out-of-hospital settings
- The Emergency Medical Services (EMS) system is activated.
EMS System

● To activate the EMS system, do one of the following:
  ➢ Dial 911
  ➢ Call the local fire or police department
  ➢ Call the phone operator

● Hospitals and other agencies have procedures for emergencies.
  ➢ A Rapid Response Team (RRT) is called to the bedside when a person shows warning signs of a life-threatening condition.
    • The RRT’s goal is to prevent death.
Basic Life Support for Adults

- When the heart and breathing stop, the person is clinically dead.
  - The American Heart Association’s (AHA) Basic Life Support (BLS) procedures support breathing and circulation.

- Chain of Survival actions for the adult are:
  - Early access to emergency cardiovascular care
  - Early cardiopulmonary resuscitation (CPR)
  - Early defibrillation
  - Early advanced care
Sudden Cardiac Arrest

- Sudden cardiac arrest (SCA) or cardiac arrest is when the heart stops suddenly and without warning.
  - There are three major signs of SCA:
    - No response
    - No breathing (Agonal gasps mean “no breathing.”)
    - No pulse
  - The person’s skin is cool, pale, and gray.
  - The person is not coughing or moving.
  - If normal rhythm is not restored, the person will die.

- Respiratory arrest is when breathing stops but heart action continues for several minutes.
  - If breathing is not restored, cardiac arrest occurs.
CPR for Adults

• Cardiopulmonary resuscitation (CPR) must be started at once when a person has SCA.
  – CPR supports breathing and circulation.
  – CPR involves four parts:
    • Chest compressions
    • Airway
    • Breathing
    • Defibrillation
Chest Compressions

- Chest compressions force blood through the circulatory system.
- Before starting chest compressions, check for a pulse.
  - Use the carotid artery on the side near you.
- Also look for signs of circulation and see if the person has started breathing or is coughing or moving.
- For effective chest compressions, the person must be on a hard, flat surface.
  - Hand position also is important.
- The AHA recommends that you:
  - Give compressions at a rate of 100 per minute.
  - Push hard, and push fast.
  - Push deeply into the chest.
  - Interrupt chest compressions only when necessary.
Airway and Breathing

● Airway
  ➢ The respiratory passages (airway) must be open to restore breathing.
  ➢ Tilting the head opens the airway.

● Breathing
  ➢ The person is given breaths.
  ➢ Before giving breaths, check for adequate breathing.
    • After opening the airway, take 5 to 10 seconds to check for adequate breathing.
  ➢ When you start CPR, give 2 breaths first.
    • Then 2 breaths are given after every 30 chest compressions.
  ➢ Mouth-to-mouth breathing is one way to give breaths.
  ➢ Mouth-to–barrier device breathing is used for giving breaths whenever possible.
Defibrillation

- Defibrillation
  - Ventricular fibrillation (VF, V-fib) is an abnormal heart rhythm that causes SCA.
  - Defibrillation as soon as possible after the onset of VF increases the person’s chance of survival.

- CPR is done only for cardiac arrest.
  - CPR is done if the person:
    - Does not respond
    - Is not breathing
    - Has no pulse
  - CPR is done alone or with another person.
  - Hands-Only CPR is used to educate persons not trained in Basic Life Support.
Recovery Position

- The recovery position:
  - Is used when the person is breathing and has a pulse but is not responding
  - Helps keep the airway open
  - Prevents aspiration
- Logroll the person into the recovery position.
  - Keep the head, neck, and spine straight.
  - A hand supports the head.
- Do not use this position if the person might have neck injuries or other trauma.
Choking

- Foreign bodies can obstruct the airway.
  - This is called choking or foreign-body airway obstruction (FBAO).
- Airway obstruction can be mild or severe.
- Abdominal thrusts are used to relieve severe airway obstruction.
  - See Chapter 9 for emergency care of the choking person.
Hemorrhage

- Hemorrhage is the excessive loss of blood in a short time.
  - If bleeding is not stopped, the person will die.

- You cannot see internal hemorrhage.
  - The bleeding is inside body tissues and body cavities.
  - Signs and symptoms include pain, shock, vomiting blood, coughing up blood, and loss of consciousness.

- If not hidden by clothing, external bleeding is usually seen.
  - Bleeding from an artery occurs in spurts.
  - There is a steady flow of blood from a vein.
Fainting

- Fainting is the sudden loss of consciousness from an inadequate blood supply to the brain.

- Common causes are:
  - Hunger, fatigue, fear, and pain
  - The sight of blood or injury
  - Standing in one position for a long time
  - Being in a warm, crowded room

- Warning signals are dizziness, perspiration, and blackness before the eyes.
  - The person looks pale.
  - The pulse is weak.
  - Respirations are shallow if consciousness is lost.
Shock

- Shock results when organs and tissues do not get enough blood.
- Causes are blood loss, myocardial infarction, burns, and severe infection.
- Signs and symptoms include:
  - Low or falling blood pressure
  - Rapid and weak pulse
  - Rapid respirations
  - Cold, moist, and pale skin
  - Thirst
  - Restlessness
  - Confusion and loss of consciousness as shock worsens
Anaphylactic Shock

• Some people are allergic or sensitive to foods, insects, chemicals, and drugs.
  ➢ An antigen is a substance that the body reacts to.

• Anaphylaxis is a life-threatening sensitivity to an antigen.
  ➢ It can occur within seconds.

• Anaphylactic shock is an emergency.

• The EMS system must be activated.

• The person needs special drugs to reverse the allergic reaction.
Stroke

- Stroke occurs when the brain is suddenly deprived of its blood supply.
  - Usually only part of the brain is affected.
- A stroke may be caused by:
  - A thrombus
  - An embolus
  - Hemorrhage if a blood vessel in the brain ruptures
- Signs of stroke depend on the size and location of brain injury.
Seizures

- Seizures (convulsions) are violent and sudden contractions or tremors of muscle groups.
- Seizures are caused by an abnormality in the brain.
Types of Seizures

- The major types of seizures are:
  - Partial seizure (Only part of the brain is involved.)
  - Generalized tonic-clonic seizure (grand mal seizure)
    - This type has two phases.
      - In the tonic phase, the person loses consciousness.
      - In the clonic phase, muscle groups contract and relax.
  - Generalized absence (petit mal) seizure

- You cannot stop a seizure.
  - You can protect the person from injury.
Burns

• Burns can severely disable a person.
• They can cause death.
• Most burns occur in the home.
• Infants, children, and older person are at risk.
• Some burns are minor; some are severe. Severity depends on:
  • Burn size and depth
  • The body part involved
  • The person’s age
Emergency Care for Burns

- Activate the EMS system
- Do not touch the person if he/she is in contact with an electrical source
- Remove the person from the fire or burn source
- Stop the burning process
- Apply cold or cool water (59°F to 77°F [15°C to 25°C]) until pain is relieved
- Do not remove burned clothing
- Remove hot clothing that is sticking to the skin
- Remove jewelry and any tight clothing that is not sticking to the skin
- Provide rescue breathing and CPR as needed
- Cover burns with sterile, cool, moist coverings
- Do not put oil, butter, salve, or ointments on burns
- Do not break blisters
- Cover the person to prevent heat loss