- 1) MAJOR UNCONTROLLABLE RISK FACTORS OF HEART ATTACK & STROKE
  - Heredity
  - Gender (Male)
  - Age (African American)
  - Race

2) MAJOR CONTROLLABLE RISK FACTORS OF HEART ATTACKS & STROKE

- Cigarette Smoking
- High Blood Pressure
- High Blood Cholesterol
- Lack of Exercise
- Obesity
- Heart Disease
- Transient Ischemic Attacks (TIAs)

Other Risk Factors Include:

- Diabetes
- Stress

3) MAJOR SIGNS OF A HEART ATTACK

- Chest discomfort most common sign, more intense and lasts longer, is not relieved(or is only partially relieved) by rest or nitroglycerin
- Other signs sweating, nausea, SOB, feeling of weakness
  - The elderly, diabetics and women are more likely to present with unusual, a typical angina without classic symptoms or with only vague, nonspecific complaints

## 4) MAJOR SIGNS OF A STROKE

- Facial paralysis
- Difficulty speaking
- Alteration in consciousness (confusion, stupor, or coma)
- Sudden weakness or numbness of face, arm or leg on one side of the body
- Slurred or incoherent speech
- Unexplained dizziness, unsteadiness, sudden falls
- Dimness or loss of vision, particularly in one eye

5) RISK FACTORS SPECIFIC TO STROKE

- TIAs
- Heart Disease
- High Red Blood Cell Count

6) CHAIN OF SURVIVAL (ADULTS)

- 1st Link Immediate recognition of cardiac arrest and activation of EMS (call 911)
- 2nd Link Early CPR with emphasis on chest compressions
- 3rd Link Rapid Defibrillation
- 4th Link Effective ACLS
- 5th Link Integrated post-cardiac arrest care

\*\*\*Good quality CPR improves a victim's chances of survival\*\*\*

The Critical concepts for quality CPR include:

- 1. "Push Hard, Push Fast": compress at a rate of at least 100 compressions per minute.
- 2. Allow full chest recoil after each compression
- 3. Minimize interruptions in chest compressions; try to keep interruptions toLess than 10 seconds
- 4. Avoid hyperventilation
- 7) RATIO OF COMPRESSIONS TO VENTILATIONS:

ADULT- 1 Rescuer 30:2 CHILD- 1 Rescuer 30:2 INFANT-1 Rescuer 30:2

8) RATE OF COMPRESSIONS:

ADULT- at least 100 times per minute CHILD- at least 100 times per minute INFANT-at least 100 times per minute

9) DEPTH OF COMPRESSIONS:

- ADULT- at least 2" (hand placed on top of hand in center of breastbone between the nipples)
- CHILD- at least 1/3 depth of the chest (heel of one hand, other hand on top or 1 hand for small victims in center of breastbone between nipples)
- INFANT- at least 1/3 the depth of infant's chest (2 fingers just below nipple line on breastbone)
- 10) The first thing to do for a collapsed victim is to determine unresponsiveness.

11) When opening the airway do the "Head Tilt - Chin Lift".

Some victims will make weak, inadequate attempts to breathe. In addition, reflex gasping respiratory efforts (agonal respirations) may occur early in the course of primary cardiac arrest. Both absent and inadequate respirations require rapid intervention with rescue breathing.

12) Breaths given too rapidly or with too much force will result in gastric distention. So remember, give each breath over 1 second.

13) Commonly, cardiac arrest in children is a result of a severe airway and breathing problem. I.e. pneumonia, laryngeal swelling from an allergic reaction, etc.

14) On the unresponsive adult victim, the single most important goal of "call first" (911) is fast arrival of EMS with the defibrillator.

15) CPR STEPS:

- A. ADULT ONE-RESCUER CPR
  - i. Make sure the scene is safe
  - ii. Victim needs to be lying on his back on a firm, flat surface1. Establish Unresponsiveness and "no breathing (only gasping)- "Are you okay?"
    - i. Tap or gently shake.
    - ii. Activate EMS and get AED if available
  - 2. Start CPR starting with 30 compressions
  - 3. Hard and fast (rate of at least 100 compressions per minute)Full chest recoil at least 2 " using 2 hands, followed by 2 breaths (1 second per breath) ensure adequate chest rise, as you give each breath.
  - 4. Continue giving 30 compressions and 2 breaths until the AED arrives, the victim starts to move, or trained help takes over.

\*If victim is breathing or resumes effective breathing, place in recovery position. Victim is placed on their side, head tilted back to keep airway open with one hand placed under the head. Upper leg is bent at the knee and brought forward.

B. ADULT FOREIGN BODY AIRWAY OBSTRUCTION - RESPONSIVE VICTIM

- 1. Ask- "Are you choking?" if yes, ask "Can you speak?" If no, tell the victim you are going to help.
- 2. Give abdominal thrusts (chest thrusts for pregnant or obese victim), avoiding compressions on the lower sternum.
- 3. Repeat thrusts till object is expelled or victim becomes unresponsive.
- C. ADULT FBAO VICTIM BECOMES UNRESPONSIVE
- 4. Activate EMS system.
- 5. Begin CPR with 30 compressions and 2 breaths
- 6. Every time you open the airway to give breaths open the mouth wide and look for the object if you see it-sweep to remove the object. If breaths

do not go in, continue with cycles of chest compressions and ventilations until the object is expelled. After removing the object, when giving 2 initial breaths watch for chest rise and fall.

After giving breaths and victim is still not breathing on own or not breathing normally (only gasping) and not moving, start CPR.

\* If victim is breathing or resumes effective breathing, and no trauma is suspected, place in recovery position.

\* If you successfully relieve choking with abdominal thrusts, encourage the victim to seek immediate attention to ensure that the victim does not have a complication from abdominal thrusts.

Outside the hospital If a bystander is not trained in CPR- the bystander should provide "Hands Only" (compression only) CPR for the "Adult victim" who suddenly collapses, with an emphasis to "PUSH HARD AND FAST" on the center of the chest, or follow the directions of the EMS dispatcher. The rescuer should continue "Hands Only" CPR until an AED arrives and is ready for use or EMS providers or other responders take over care of the victim.

All "Trained lay rescuers" should, at a minimum, provide chest compressions for victims of cardiac arrest. If the trained lay rescuer is able to perform rescue breaths, compressions and breaths should be provided in a ratio of 30 compressions to 2 breaths. The rescuer should continue CPR until an AED arrives and is ready for use or EMS providers take over care of the victim.

## PEDIATRIC

- A. CHAIN OF SURVIVAL (PEDIATRIC)
- 1st Link Prevention of Injuries and Arrest (preventing SIDS & injuries)
- 2nd Link Early and effective bystander CPR with emphasis on chest compressions
- 3rd Link Rapid activation of the EMS system
- 4th Link Early and effective advanced life support
- 5th Link Integrated post-cardiac arrest care
- B. COMMON CAUSES OF CARDIAC ARREST IN INFANTS & CHILDREN
  - 1. Often caused by breathing emergencies
  - 2. Onset often follows illness or injury
  - Primary heart rhythm problems are uncommon (especially in children < 8 yrs old)</li>
- C. COMMON CAUSES OF RESPIRATORY ARREST IN INFANTS & CHILDREN
  - 1. Submersion/near drowning
  - 2. FBAO
  - 3. Poisoning or drug overdose
  - 4. Smoke inhalation
  - 5. Respiratory infection
  - 6. Electrocution
  - 7. Suffocation

8. Head injuries

SIGNS OF SEVERE OR COMPLETE FBAO IN INFANTS & CHILDREN INCLUDE THE SUDDEN ONSET OF SIGNS OF:

- 1. Weak or silent coughing
- 2. Inability to speak
- 3. Strider (a high-pitched, noisy sound or wheezing)
- 4. Increasing difficulty breathing

D. WAYS TO PREVENT INJURY OR DEATH

- 1. Buckle up everyone in the vehicle Children & infants in child restraint devices - < age 12 in back seat</pre>
- 2. Wear bicycle helmets
- 3. Supervise children near traffic & water
- 4. Use smoke alarms & keep drapes and furniture away from heaters
- 5. Place healthy term infant to sleep on back or side
- 6. Keep plastic bags, small objects, and poisons out of reach
- 7. Use gates to block stairways

PEDIATRIC CPR & FBAO

A. CHILD ONE - RESCUER CPR age 1-8

Make sure the scene is safe

Victim needs to be lying on his back on a firm flat surface

- Establish unresponsiveness and "no breathing or only gasping"- "Are you okay?"
  - i. If unresponsive send someone to phone 911, if alone start CPR
- 2. Start CPR starting with 30 compressions at a rate of at least 100 compressions
  - i. 1/3 the depth of the chest per minute followed by 2 breaths.
  - ii. After each chest compression full chest recoil. May use 1 or2 hands depending on the size of the child.
- 3. After 5 sets of 30 compressions and 2 breaths, if someone has not called 911 leave the child and call.
- 4. Return to the child and begin steps of CPR until the victim starts to move, or trained help takes over.

\* If victim is breathing or resumes effective breathing, place in recovery position.

- B. CHILD FOREIGN BODY AIRWAY OBSTRUCTION-RESPONSIVE VICTIM
  - 1. Ask "Are you choking?" If yes, ask "Can you speak?" If no, tell child you are going to help.
  - 2. Give abdominal thrusts using proper hand position (avoid Xyphoid)
  - 3. Repeat thrusts til object is expelled or victim becomes unresponsive.
  - 4. CHILD FBAO VICTIM BECOMES UNCONSCIOUS
  - 5. If second rescuer is available, have him or her activate the EMS system.
  - 6. Begin CPR with 30 compressions and 2 breaths

- a. Every time you open the airway to give breaths open the mouth wide and look for the object - if you see it, remove the object but do not perform a blind finger sweep because it may push obstructing objects farther into the throat.
- 7. Continue with cycles of chest compressions and ventilations until the object is expelled.
- 8. After 2 minutes, if alone, leave the child victim to call 911.
- 9. After relieving choking, watch for chest rise when you give 2 initial breaths.
- 10. After giving breaths and victim is not breathing on own or breathing normally (only gasping) and not moving start CPR.
- 11. If victim is breathing or resumes effective breathing, place in recovery position.
- C. INFANT ONE RESCUER CPR

Make sure the scene is safe.

- 1. Establish unresponsiveness and "no breathing or only gasping"
  - a. If second rescuer is available, have him or her activate the EMS system.
  - b. If alone stay with the infant and perform CPR
- 2. Start CPR starting with 30 chest compressions at a rate of at least 100
  - a. compressions per minute 1/3 the depth of the chest by putting 2 fingers of one hand just below the nipple line per minute followed by 2 breaths (1 second per breath and ensure adequate chest rise, as you give each breath.
  - b. After each chest compression full chest recoil.
  - c. After 5 sets of 30 compressions and 2 breaths if someone has not called 911 leave the infant and call 911.
- 3. Return to the infant and continue giving 30 compressions and 2 breaths until the infant starts to move or trained help takes over.

\* If victim is breathing or resumes effective breathing, place in recovery position.

- E. INFANT FOREIGN BODY AIRWAY OBSTRUCTION RESPONSIVE VICTIM
- Check for serious breathing difficulty, ineffective cough, no strong cry.
  a. Confirm signs of severe or complete airway obstruction.
- 2. Hold the infant face down on your forearm.
  - a. Support the infant's head and jaw with
  - b. Your hand. Sit or kneel and rest your arm on your lap or thigh.
- 3. Give up to 5 back slaps
- 4. Then 5 chest thrusts. (Using 2 fingers of your free hand push on the breastbone
  - a. In the same place as compressions.
- 5. Alternate giving 5 back slaps and 5 chest thrusts until object comes out and the infant can breathe, cough, or cry, or until infant stops responding.

INFANT FOREIGN - BODY AIRWAY OBSTRUCTION - VICTIM BECOMES UNRESPONSIVE

- 4. If second rescuer is available, have him or her activate the EMS system.
- 5. Begin CPR
- 6. Every time you open the airway to give breaths, open the infant's mouth wide and look for the object. If you see an object, remove it with your fingers. If you do not see the object, keep giving sets of 30 compressions and 2 breaths.

Continue CPR until the infant starts to move or trained help takes over.

- 7. After 5 cycles or 2 minutes, if alone leave the infant to call 911.
- 8. Return to the infant and continue the steps of CPR.
- 9. After relieving choking, watch for chest rise when you give 2 initial breaths.
- 10. After giving breaths and victim is not breathing on own or not breathing normally (only gasping) and not moving, start CPR.

\* If victim is breathing or resumes effective breathing, place in recovery position.