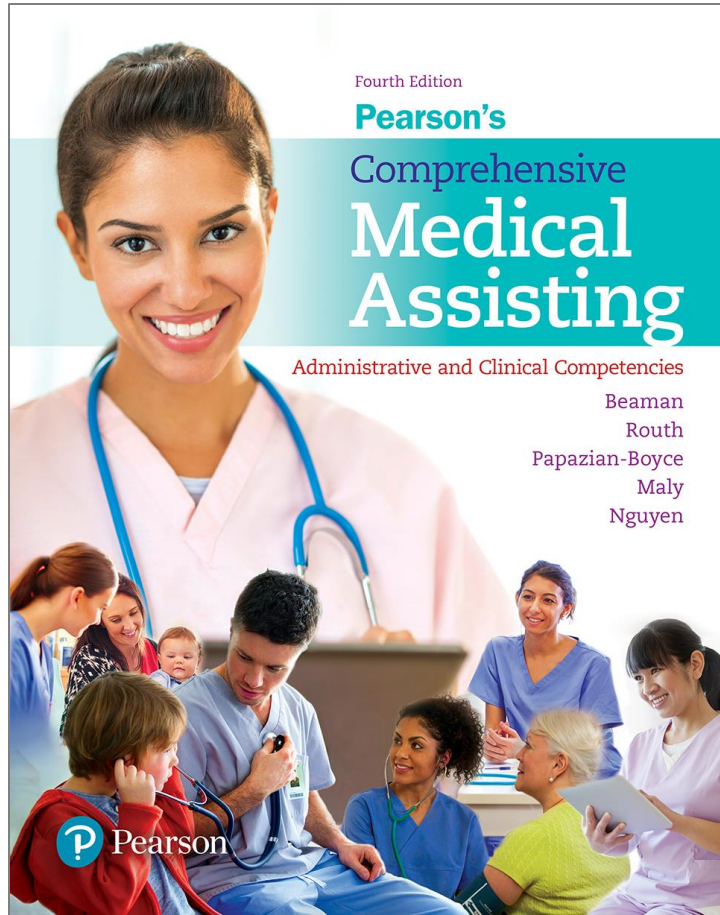


Pearson's Comprehensive Medical Assisting: Administrative and Clinical Competencies

Fourth Edition



Chapter 42 Assisting with Medical Emergencies and Emergency Preparedness Lesson 2: Medical Emergencies

Learning Objectives (1 of 3)

After completing this chapter, you should be able to:

42.5 Describe the principles of cardiopulmonary resuscitation.

42.6 Explain how to provide first aid to a person with an obstructed airway.

42.7 Describe the symptoms of different types of respiratory distress.

42.8 Explain how to provide first aid to a person in shock.

Learning Objectives (2 of 3)

42.9 Explain how to provide first aid to a person with a diabetic emergency.

42.10 Explain how to provide first aid to a person who is bleeding.

42.11 Explain how to provide first aid to a person with a wound.

42.12 Explain how to provide first aid to a person with a burn.

Learning Objectives (3 of 3)

42.13 Explain how to provide first aid to a person with temperature-related emergencies.

42.14 Explain how to provide first aid to a person having a seizure.

42.15 Explain how to provide first aid to a person who has syncope.

42.16 Explain how to provide first aid to a person with a musculoskeletal injury.

Medical Emergencies (1 of 189)

- Cardiopulmonary Resuscitation (CPR) and Automated External Defibrillation (AED)
 - Causes
 - An occluded airway
 - Electrocution
 - Shock
 - Drowning
 - Heart attack

Medical Emergencies (2 of 189)

- Cardiopulmonary Resuscitation (CPR) and Automated External Defibrillation (AED)
 - Causes
 - Trauma
 - Anaphylaxis
 - Drugs
 - Poisoning
 - Traumatic head or chest injury

Medical Emergencies (3 of 189)

- CPR and AED
 - Intervention must be immediate
 - Follow basic life support guidelines
 - For individuals experiencing loss of consciousness with no breathing or no normal breathing, follow CPR protocol

Medical Emergencies (4 of 189)

- CPR Guidelines
 - Adult guidelines include adolescents, who are defined as those who have gone through puberty
 - Signs of puberty include chest or underarm hair in males and breast development in females

Medical Emergencies (5 of 189)

- CPR Guidelines
 - A child is defined as 1 year of age to puberty
 - Infant guidelines should be applied to patients less than 1 year of age

Table 42-3 Adult, Child, and Infant CPR Standards (1 of 2)

Conscious Choking

Abdominal thrusts for adult or child over 1 year of age. Five back slaps, then five chest thrusts (same as chest compressions) for an infant (less than 1 year of age). Continue the sequence for the adult, child, or infant until the obstruction is relieved or the patient becomes unconscious.

Unconscious Choking

Activate emergency response system, lower the patient to the ground or onto a hard surface, initiate CPR beginning with chest compressions (do not check for a pulse). Before ventilation, open the airway and inspect for an obstruction. If the obstruction is seen and can be removed, remove it with your fingers. If no object is seen, attempt to deliver two breaths and continue with CPR until the obstruction is relieved or EMS arrives on the scene. Use this sequence for adults, children, and infants.

Rescue Breaths

Deliver the breath over one second with enough volume to cause the chest to rise. Do not overventilate with too much volume, too fast, or with too much pressure.

Chest Compression to Ventilation Ratio for a Single Rescuer

30 compressions: two ventilations for the adult, child, and infant.

Chest Compression to Ventilation Ratio for Two Rescuers

30 compressions: two ventilations for the adult, 15 compressions: two ventilations for the child and infant.

Table 42-3 Adult, Child, and Infant CPR Standards (2 of 2)

Chest Compression Rate	At least 100-120/minute for the adult, child, and infant.
Chest Compression Hand Position	Center of the chest on the lower half of the sternum for the adult and child. Two fingers in the center of the chest just below the nipple line for one-rescuer infant chest compressions. Both hands encircling the chest with both thumbs on the center of the chest just below the nipple line, with hands supporting the back, for two-rescuer infant chest compressions.
AED	Use adult defibrillation pads on any patient 8 years of age or older. Use child defibrillation pads on any child less than 8 years of age. If no child pads are available, adult defibrillation pads should be used on children and infants. Deliver one shock if advised and then continue CPR until advised—approximately two minutes (or five cycles).
Anaphylaxis	Assist person with use of prescribed auto injector.
Asthma	Assist person with use of prescribed inhaler.

Medical Emergencies (6 of 189)

- CPR and AED
 - If alone when finding an unresponsive adult:
 - Shout out for help immediately after checking patient's unresponsiveness and lack of breathing
 - If someone responds, have that person activate EMS, get an AED, and return to assist you
 - While individual activates EMS, work alone to check for pulse

Medical Emergencies (7 of 189)

- CPR and AED
 - If there is no pulse, immediately begin CPR protocol
 - If no one has responded to your call for help, first call 911 or activate EMS and get an AED

Medical Emergencies (8 of 189)

- CPR and AED
 - Then, check for a pulse upon return to the patient
 - If infant or child is unresponsive, provide five cycles of CPR first before leaving to activate EMS and get an AED

Medical Emergencies (9 of 189)

- CPR and AED
 - Early access to EMS is important
 - Immediate initiation of chest compressions is imperative to a patient's survival
 - Initial sequence followed for CPR is CAB sequence
 - Circulation, Airway, Breathing

Medical Emergencies (10 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - Tap the patient’s shoulder and ask, “Are you okay?” If there is no response, check for breathing. If the patient is unresponsive and there is no breathing or no normal breathing (agonal breathing), shout for someone to activate the emergency response system by dialing 911.

Medical Emergencies (11 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - Check for a carotid pulse for at least five seconds but no more than ten seconds. If a pulse is not found within ten seconds, initiate CPR by immediately beginning chest compressions (CAB sequence).

Medical Emergencies (12 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - Begin chest compressions by positioning yourself at the patient's side. The patient should be in a supine (face up) position and on a hard or firm surface. If the patient is in a prone (face down) or lateral (on the side) position, logroll him or her into a supine position. If a spinal injury is suspected, try to keep the patient's head and neck in line with the navel when doing the logroll.

Medical Emergencies (13 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - Place the heel of one hand on the center of the patient's chest on the lower half of the sternum (breast bone). Place the heel of your other hand on top of your first hand with your fingers interlaced. Straighten your arms and get up on your knees until your shoulders are directly over your hands.

Medical Emergencies (14 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - Place the heel of one hand on the center of the patient's chest on the lower half of the sternum (breast bone). Place the heel of your other hand on top of your first hand with your fingers interlaced. Straighten your arms and get up on your knees until your shoulders are directly over your hands.

Medical Emergencies (15 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - According to the AHA, you should “push hard and fast.” Push hard so that each compression is delivered at a depth of at least 2 inches but not to exceed 2.4 inches (5 cm). Make sure that at the end of each compression, you allow the chest to recoil completely without taking your hands completely off the patient’s chest. This is vitally important to facilitating blood flow. By not allowing the chest to recoil completely, you will impede the flow of blood to the heart and brain.

Medical Emergencies (16 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - Push fast by delivering the compressions in a smooth motion at a rate of at least 100-120 compressions per minute (30 compressions should be delivered in 18 seconds or less). Do not interrupt compressions or minimize the time and number of interruptions. The more interruptions, the more poorly the blood flows to the brain and heart. Provide 30 compressions.

Medical Emergencies (17 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - Push fast by delivering the compressions in a smooth motion at a rate of at least 100-120 compressions per minute (30 compressions should be delivered in 18 seconds or less). Do not interrupt compressions or minimize the time and number of interruptions. The more interruptions, the more poorly the blood flows to the brain and heart. Provide 30 compressions.

Medical Emergencies (18 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - After the first rescuer provides the first 30 compressions, the second rescuer will open the airway with a head-tilt, chin-lift by placing the palm of one hand on the forehead and two or three fingers of the other hand under the bony part of the lower jawbone near the chin.

Medical Emergencies (19 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - The second rescuer will then gently tilt the head backward and lift the jaw forward. If a spinal injury is suspected, a jaw-thrust maneuver must be used to open the airway. (If the jaw thrust fails to open the airway, switch to a head-tilt, chin-lift. By doing the head-tilt, chin-lift, or jaw-thrust maneuver, the tongue is lifted forward and the airway opened.

Medical Emergencies (20 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - To deliver ventilations, pinch the patient's nose shut, seal your lips tightly around the patient's mouth, and slowly deliver two breaths, each lasting one second. It is recommended that mouth-to-mask or bag-valve mask devices be used initially, if available, or to replace mouth-to-mouth as quickly as possible.

Medical Emergencies (21 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - You will know the artificial ventilation is effective if the patient's chest rises with each delivered breath. For a patient with a tracheotomy, it may be necessary to close the mouth and nose and administer breaths to the tracheotomy.

Medical Emergencies (22 of 189)

- One-Person and Two-Person CPR Sequence for an Adult Patient
 - Continue to deliver cycles of 30 compressions and two breaths. Switch duties between the rescuers every five cycles or approximately every two minutes. Chest compressions should not be interrupted for more than five seconds to switch compressors. As soon as an automated external defibrillator (AED) becomes available, power-on the device and apply the proper defibrillation pads (adult or pediatric) and follow the prompts.

Figure 42-3

Position of hands for chest compression on an adult (*George Draper/Pearson Education, Inc.*).



Figure 42-4

Head-tilt, chin-lift maneuver (*Michal Heron/Pearson Education, Inc.*).



Figure 42-5

Jaw-thrust maneuver (*Michal Heron/Pearson Education, Inc.*).



Procedure 42-1 Performing Adult Rescue Breathing and One- and Two-Rescuer CPR (1 of 3)

Objective ♦ *Administer rescue breathing for an adult and one- and two-rescuer CPR for an adult correctly, within the time frames designated.*

EQUIPMENT AND SUPPLIES

Approved mannequin; gloves; ventilator mask; mouth guard

METHOD

- *Note:* All medical assistants should obtain and maintain professional level CPR certification (which includes performance of two-person CPR). Medical offices often have more than one employee with professional-level CPR certification. If, as a medical assistant, you are alone with a patient who needs CPR, shout for help. If someone comes right away—and while you begin one-person CPR—that second person can call 911 to activate EMS response and can also retrieve the office defibrillator. If that or another person in the office has professional level CPR certification, the two of you can then continue with two-person CPR and defibrillation until EMS arrives.

The first set of instructions below, for one-rescuer CPR, assumes you will be working alone. The second set of instructions, for two-rescuer CPR, assumes that a second person with professional level CPR certification will be available to work with you.

ONE-RESCUER ADULT CPR

1. Assess the patient and determine if help is needed. Shout “Are you okay?” while gently tapping the patient’s shoulders.
2. If you determine that the adult patient is unresponsive and not breathing or not breathing normally (agonal breathing), *activate EMS immediately* by calling 911, then get an AED if available (or shout for another office employee to call 911 and get the AED).

Procedure 42-1 Performing Adult Rescue Breathing and One- and Two-Rescuer CPR (2 of 3)

3. Check a carotid pulse (Figure A) for no less than five seconds but no longer than ten seconds. If there is definitely no pulse, begin chest compressions. Kneel at the patient's side. Place your hand in the center of the chest on the lower half of the sternum.
4. Place your other hand on top of the first hand on the chest, interlock your fingers, and be sure to lift your fingers off the chest using only the heels of your hands to administer compressions.
5. Kneel next to the patient and keep your shoulders directly over your hands. Compress the chest at least 2 inches but not to exceed 2.4 inches and allow the chest to completely recoil after each compression (Figure B). Do not lift your hands completely off the chest.
6. Continue to compress the chest a total of 30 times at a rate of at least 100-120 compressions/minute.
7. After 30 compressions are delivered, perform a head tilt, chin-lift, or, if spine injury is suspected, a jaw-thrust maneuver to open the airway. Administer two breaths with each delivered over one second, preferably using a mouth-to-mask protective device (Figure C).
 8. Continue chest compressions and ventilations.
 8. Apply the AED as soon as it becomes available. (See Procedure 42-3 regarding defibrillator use.)
 9. Repeat this sequence until a pulse has been restored or until EMS arrives.
 10. If breathing is absent, but a pulse has been restored, administer two rescue breaths, preferably using a mouth-to-mask device. If your breaths do not cause the chest to rise, reestablish the head-tilt, chin-lift, or jaw-thrust maneuver. If you suspect choking, look in the patient's mouth and remove an object if you see one. If you see no obstruction, continue with rescue breathing. If an obstruction is present, perform the steps for an obstructed airway.
 11. Wash your hands and document the incident in the patient's chart.

TWO-RESCUER ADULT CPR

1. Follow the steps just described for one-rescuer adult CPR until a second rescuer certified in professional-level CPR can join you.

Procedure 42-1 Performing Adult Rescue Breathing and One- and Two-Rescuer CPR (3 of 3)

2. Continue performing chest compressions while the second rescuer positions him- or herself by kneeling above the patient's head (Figure D). After you have completed a cycle of 30 compressions, the second rescuer will administer two breaths, as described in the steps for one-rescuer CPR (Figure E).
3. Switch positions with the second rescuer every five cycles (approximately every two minutes), the ventilator taking over chest compressions while the compressor takes over ventilations.
4. Repeat this sequence until a pulse has been restored or until EMS arrives.
5. If breathing is absent, but a pulse has been restored, administer two rescue breaths as described in step 10 for one-rescuer CPR.
6. Wash your hands and document the incident in the patient's chart.

CHARTING EXAMPLE

08/05/YY 7:30 P.M. Patient found collapsed in bathroom and unresponsive. 911 call placed and CPR started. EMS arrived in approximately six minutes and took over care. Patient was transferred to Deaconess Medical Center.....V. Nagle, RMA

Procedure 42-1 Figure A

Assess circulation by feeling for carotid pulse.



Procedure 42-1 Figure B

Rescuer working alone delivers chest compressions.



Procedure 42-1 Figure C

Rescuer working alone delivers ventilations through a mouth-to-mask protective device.



Procedure 42-1 Figure D

First rescuer continues chest compressions as second rescuer takes a position above the patient's head.



Procedure 42-1 Figure E

First rescuer rests but does not remove hands from patient's chest while second rescuer administers two ventilations.



Medical Emergencies (23 of 189)

- One-Person and Two-Person CPR Sequence for a Child from 1 Year of Age to Puberty
 - Assess for responsiveness by tapping the child's shoulder. If unresponsive or agonal breathing, have someone activate EMS and get AED.

Medical Emergencies (24 of 189)

- One-Person and Two-Person CPR Sequence for a Child from 1 Year of Age to Puberty
 - Check femoral or carotid pulse for at least five seconds but no more than ten seconds; if no pulse felt or heart rate less than 60/minute, begin CPR (CAB sequence)

Medical Emergencies (25 of 189)

- One-Person and Two-Person CPR Sequence for a Child from 1 Year of Age to Puberty
 - Depending on size of the child and your strength, provide chest compressions using both hands or the heel of one hand for smaller children. Use a ratio of 30 compressions to 2 ventilations.

Medical Emergencies (26 of 189)

- One-Person and Two-Person CPR Sequence for a Child from 1 Year of Age to Puberty
 - When second rescuer arrives, switch to a ratio of 15 compressions to 2 ventilations

Figure 42-6

Compressions for a child.



Medical Emergencies (27 of 189)

- One-Person and Two-Person CPR Sequence for a Child from 1 Year of Age to Puberty
 - Compress at a rate of at least 100-120/minute and at least $\frac{1}{3}$ the depth of the chest, or approximately 2 inches but not to exceed 2.4 inches. Allow the child's chest to completely recoil after each compression. Provide 15 compressions.

Medical Emergencies (28 of 189)

- One-Person and Two-Person CPR Sequence for a Child from 1 Year of Age to Puberty
 - Second rescuer will open the airway using a head-tilt, chin-lift or jaw-thrust maneuver. Deliver 2 slow ventilations over 1 second and watch for chest rise with each ventilation.

Medical Emergencies (29 of 189)

- One-Person and Two-Person CPR Sequence for a Child from 1 Year of Age to Puberty
 - When AED becomes available, power-on the AED, apply pediatric defibrillation pads, if available, and follow the prompts

Medical Emergencies (30 of 189)

- One-Person and Two-Person CPR Sequence for a Child from 1 Year of Age to Puberty
 - Push hard and push fast while delivering 15 compressions followed by 2 breaths

Medical Emergencies (31 of 189)

- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - Assess the infant for responsiveness by flicking the sole of the foot. If infant is unresponsive and has no breathing or agonal breathing, have someone activate the emergency response and get an AED.

Medical Emergencies (32 of 189)

- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - Check the infant's brachial pulse for at least five seconds but no longer than ten seconds.

Medical Emergencies (33 of 189)

- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - If no pulse or heart rate less than 60/minute with signs of poor perfusion, begin CPR by initiating chest compressions

Medical Emergencies (34 of 189)

- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - If second rescuer available, use a 15 compression to 2 ventilation ratio
 - If one rescuer only, immediately initiate CPR using a 30 compression to 2 ventilation ratio until the second rescuer arrives

Medical Emergencies (35 of 189)

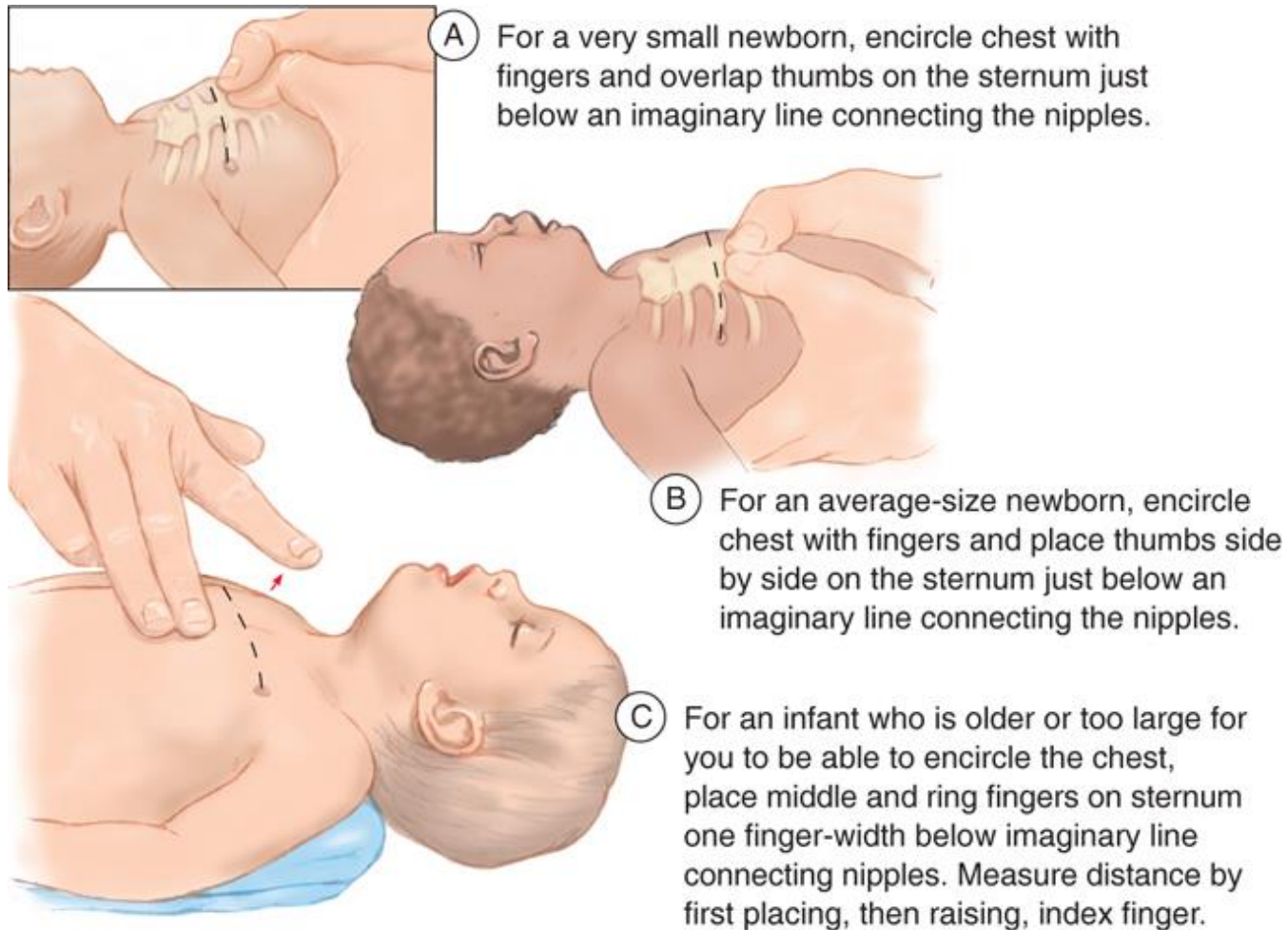
- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - One rescuer CPR
 - Use 2-finger compressions technique
 - Two rescuer CPR
 - 2 thumb-encircling hands techniques should be used to deliver the chest compressions

Medical Emergencies (36 of 189)

- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - Push hard enough to compress the chest at least $\frac{1}{3}$ the anterior-posterior diameter, which is approximately $1\frac{1}{2}$ inches in the infant.

Figure 42-7

Compressions for an infant.



Medical Emergencies (37 of 189)

- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - Compressions should be delivered at a rate of at least 100-120 compressions/minute. Deliver 15 compressions.

Medical Emergencies (38 of 189)

- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - Second rescuer should open the airway by placing the infant's head and neck in a neutral position
 - Use chin lift and ventilate using mouth-to-mask device or infant bag-valve mask device

Medical Emergencies (39 of 189)

- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - If mouth-to-mouth required, place your mouth over the nose and mouth of the infant
 - If chest rise is not present, slightly extend the head and neck until the airway is open

Medical Emergencies (40 of 189)

- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - Do not hyperextend the head and neck.
 - Ensure that the chest rises with each delivered ventilation

Medical Emergencies (41 of 189)

- One-Person and Two-Person CPR Sequence for an Infant Less Than 1 Year of Age
 - Administer 2 ventilations after each 15 compressions
 - Apply AED using pediatric defibrillation pads, if available. Turn on the device and follow the prompts.

Medical Emergencies (42 of 189)

- Rescue Breathing
 - If patient has a pulse but is not spontaneously breathing, provide rescue breaths until EMS arrives

Medical Emergencies (43 of 189)

- Rescue Breathing
 - Adult
 - Ventilate every five to six seconds (10 to 12 breaths/minute)
 - Child/infant
 - Ventilate every three to five seconds (12 to 20 breaths/minute)
 - Each ventilation should be delivered over one second

Medical Emergencies (44 of 189)

- Rescue Breathing
 - If infant's heart rate decreases to less than 60 bpm with signs of poor perfusion, begin CPR by initiating chest compressions
 - Ensure airway is open and ventilations delivered adequately

Medical Emergencies (45 of 189)

- Rescue Breathing
 - With any patient, place the palm of one hand on the forehead and two or three fingers under the lower jawbone to gently tilt the head backward

Medical Emergencies (46 of 189)

- Rescue Breathing
 - Use jaw-thrust maneuver if cervical or other spine injuries suspected
 - If pulse present, but no spontaneous breathing, continue rescue breathing until EMS arrives

Procedure 42-2 Performing Infant Rescue Breathing (1 of 2)

Objective ♦ *Administer rescue breathing for an infant correctly and within the designated time frame.*

EQUIPMENT AND SUPPLIES

Approved mannequin; gloves; ventilator mask; mouth guard

METHOD

1. Assess for responsiveness and breathing. Never shake an infant.
2. If you determine that the infant is not breathing or not breathing normally but has a pulse, perform rescue breathing. Immediately activate EMS by calling 911.
3. Carefully place the patient in a supine position. If a spine injury is suspected, keep the head and neck in line with the navel.
4. With the palm of one hand, tilt the patient's head back. With two to three fingers of the other hand, lift the lower jaw forward to open the airway (Figure A).
5. If possible, place a face mask for mouth-to-mask ventilation over the patient's mouth and nose (Figure B). If two rescuers are present, one may cradle the infant in a supine position while the other administers ventilations (Figure C). Administer two rescue breaths. If your breaths do not cause the chest to rise, reestablish the head-tilt, chin-lift, or jaw-thrust maneuver. If you suspect choking, look in the patient's mouth and remove an object if you see one. If you see no obstruction, continue with rescue breathing. If an obstruction is present, perform the steps for an obstructed airway.

Procedure 42-2 Performing Infant Rescue Breathing (2 of 2)

6. Once the obstruction is clear, begin rescue breathing by administering one breath every three to five seconds or 12 to 20 breaths every minute.
7. Continue breaths until the infant recovers or EMS arrives.
8. Wash hands and document the incident in the patient's chart.

CHARTING EXAMPLE

10/09/YY 9:45 A.M. 10-month-old patient choked in exam room and was not responsive when physician and medical assistant arrived. Called 911 and EMS activated as directed by the physician. Infant rescue breathing was initiated by the physician until EMS arrived. Patient transported to Walters Creek General Hospital.....M. Cowan, CMA (AAMA)

Procedure 42-2 Figure A

For infant rescue breathing, gently open the airway.



Procedure 42-2 Figure B

Cover the infant's mouth and nose with the mouth-to-mask device before delivering ventilations.



Procedure 42-2 Figure C

If two rescuers are present, one may cradle the infant in a supine position while the other delivers ventilations.



Medical Emergencies (47 of 189)

- Defibrillation
 - Highly effective when provided immediately after or within minutes of an adult cardiac arrest
 - Most cardiac arrests in adults are related to fatal electrical arrhythmias of the heart that are sometimes converted with defibrillators

Medical Emergencies (48 of 189)

- Defibrillation
 - AED gives verbal prompts to the rescuer or rescue team that are easy and safe to follow

Medical Emergencies (49 of 189)

- Defibrillation
 - AEDs are applied to adults, children, and infants
 - Recommended that child-size defibrillator pads and pediatric attenuator cables be used in children less than 8 years of age

Medical Emergencies (50 of 189)

- Defibrillation
 - Adult defibrillation pads and cables used for any patient older than 8 years of age
 - If no child defibrillator pads or pediatric cables available, apply adult AED to the patient regardless of age

Procedure 42-3 Demonstrating the Use of an Automated External Defibrillator (1 of 2)

Objective ♦ *Use an automated external defibrillator (AED) correctly within the time frame designated by the instructor.*

EQUIPMENT AND SUPPLIES

AED machine; patient chart

METHOD

1. Place the AED (Figure A) next to the patient's left ear. This position allows the rescuers clear access to the chest and airway for continued CPR while the AED is being set up. (One provider may continue one-person CPR while the other sets up the AED) (Figure B).
2. Turn the AED on (Figure C) and follow the voice prompts.
3. You will be prompted to attach the electrode pads to the patient's chest, following the diagram provided for correct placement (Figure D). Use adult-size electrode pads on patients 8 years of age and older. Child-size electrode pads are used for patients less than 8 years of age. (Use adult-size pads on a patient less than 8 years of age if child-size pads are not available.)
4. Next, you will be directed to clear the patient to allow the machine to analyze the heart rhythm to determine if a shockable rhythm is present (Figure E). CPR should cease while the machine is analyzing, and no one should be in contact with the patient for any reason.

Procedure 42-3 Demonstrating the Use of an Automated External Defibrillator (2 of 2)

5. If a shockable rhythm is present, the AED will automatically begin a charging sequence and warn rescuers to stand back and not to touch the patient. The voice prompt will then tell you to press the SHOCK button to administer the electrical current to the patient (Figure F).
6. If the machine indicates “No shock is advised,” continue CPR beginning with chest compressions. After two minutes, the AED will prompt you to stand clear and will reanalyze the rhythm. Repeat step 5 if a shockable rhythm is present or continue CPR beginning with chest compressions. Repeat this sequence until advanced medical personnel arrive or the patient regains a pulse.

CHARTING EXAMPLE

11/25/YY 3:30 P.M. Patient found in stairwell, unresponsive, with absence of pulse and respirations. 911 protocol initiated with two-rescuer CPR. Third rescuer initiated AED response, and patient was analyzed for shockable rhythm. CPR and AED shocks administered a total of eight cycles before advanced medical support arrived. Patient released to EMS care and transferred to Sacred Heart Medical Center.....M. Cowan, CMA (AAMA)

Procedure 42-3 Figure A

Place the AED next to the patient's ear in order not to interfere with continuing chest compressions and ventilations.



Procedure 42-3 Figure B

One rescuer continues chest compressions while a second rescuer sets up the AED.



Procedure 42-3 Figure C

Press the “on” button of the AED to hear instructions.



Procedure 42-3 Figure D

Rescuer two applies the AED pads while rescuer one continues chest compressions.



Procedure 42-3 Figure E

Rescuer one commands “CLEAR” before AED analyzes the heart rhythm. No one must touch the patient during analysis or shock delivery.



Procedure 42-3 Figure F

If advised by the AED, press the “shock” button.



Medical Emergencies (51 of 189)

- Obstructed Airway
 - Prevents movement of air into or out of the respiratory tract
 - Certain disease conditions can cause a blockage from swelling of the upper airway tissue

Medical Emergencies (52 of 189)

- Obstructed Airway
 - Most obstructions caused by foreign objects
 - In small children, obstruction may be food or small toys

Medical Emergencies (53 of 189)

- Obstructed Airway
 - In adults, may be result of:
 - Not chewing large pieces of food properly
 - Talking too excitedly or laughing too much while eating
 - Drinking alcohol before and during eating
 - Choking on body or extraneous fluids, such as vomit or blood

Medical Emergencies (54 of 189)

- Obstructed Airway
 - MA should know how to respond to the following choking scenarios:
 - Partial airway with good air exchange
 - Partial airway obstruction with poor air exchange
 - Total obstructed airway

Medical Emergencies (55 of 189)

- Obstructed Airway
 - Universal choking sign
 - Crossing the hands at the throat to signal for help
 - Partial airway obstruction
 - Allows some air into the respiratory tract; characterized by a high-pitched noise on inhalation and exhalation

Medical Emergencies (56 of 189)

- Obstructed Airway
 - If patient can speak or cry, air is moving in or out of airway
 - Ask choking patient, “Are you choking?”

Figure 42-8

The universal choking sign (*Michal Heron/Pearson Education, Inc.*).



Medical Emergencies (57 of 189)

- For still-conscious patient
 - Stand behind patient
 - Put arms around his abdomen between xiphoid process
 - Make fist with one hand; wrap other hand around fist; pull fisted hand in and up

Medical Emergencies (58 of 189)

- For still-conscious patient
 - If patient becomes unconscious, ease patient to floor to prevent injury
 - For obese patient or pregnant woman, provide chest thrusts to center of the chest over the lower half of the sternum

Figure 42-9

Abdominal thrusts are delivered with a firm thrust into the patient's abdomen with an upward movement
(Michal Heron/Pearson Education, Inc.).



Figure 42-10

To clear an obstructed airway in an infant (A) use chest thrusts (*Michal Heron/Pearson Education, Inc.*) followed by (B) back blows (*Mike Gallitelli/Pearson Education, Inc.*).



Procedure 42-4 Responding to an Adult with an Obstructed Airway (1 of 2)

Objective ♦ *Administer abdominal thrusts to an adult correctly, within the time frame designated.*

EQUIPMENT AND SUPPLIES

Approved mannequin; gloves; ventilation mask with one-way valve for unconscious patient

METHOD

1. Once it has been established that the patient is choking, with no air exchange, direct someone to call 911 and shout, “Are you choking?” If the answer is yes—as indicated by a head nod—tell the patient you are going to begin emergency treatment.
2. Stand behind the patient with your feet slightly apart, placing one foot between the patient’s feet and one to the outside. This stance will give you greater stability, and if the patient should pass out, you can safely guide the patient to the ground by sliding him or her down your thigh.
3. Place the index finger of one hand at the person’s navel or belt buckle to mark that spot. If the patient is an obviously pregnant woman or is obese, perform chest thrusts (see step 7).
4. Make a fist with your other hand and place it, thumb side to patient, above your other hand.
5. Place your marking hand over your curled fist and begin to give quick inward and upward thrusts (review Figure 42-9).
6. There is no set number of thrusts to give to an adult who remains conscious. Continue to give thrusts until the object is removed or the patient becomes unconscious.
7. If the patient is an obviously pregnant woman or is obese, help the patient to lie on the ground in a supine position and perform chest thrusts.

Procedure 42-4 Responding to an Adult with an Obstructed Airway (2 of 2)

8. If the patient becomes unconscious, gently lower him or her to the ground.
9. Activate EMS and put on gloves.
10. Immediately begin CPR with 30 chest compressions followed by two rescue breaths, using a ventilation mask. Before administering the rescue breaths, open the airway with the head-tilt, chin-lift maneuver (review Figure 42-4). Look for a foreign body in the patient's mouth and remove it if it is visible. Blind finger sweeps are no longer recommended and should not be performed.
11. Continue with cycles of 30 compressions and two rescue breaths until the foreign body is expelled or advanced medical personnel arrive to relieve you. Check for the foreign object each time the airway is opened to deliver the rescue breaths.

12. Wash hands and document the event in the patient's chart.

CHARTING EXAMPLE

10/25/YY 11:30 A.M. Jason Jones exhibited signs of choking at lunch. Jason grabbed his throat and was unable to cough or make noise. Tina Muller, RMA, alerted the physician and placed a call to 911. Abdominal thrusts were given until the piece of apple was expelled. EMS arrived and checked Jason for signs of throat irritation and swelling.....J. Walker, CMA (AAMA)

Medical Emergencies (59 of 189)

- For unconscious patient
 - Activate emergency response system
 - Lower patient to ground onto hard surface
 - Initiate CPR beginning with chest compressions

Medical Emergencies (60 of 189)

- For unconscious patient
 - Before ventilating, open airway and inspect for obstruction. If you can see it, remove it with your fingers.
 - If you don't see an object, attempt to deliver two breaths and continue with CPR until obstruction relieved or EMS arrives
 - Use sequence for adults, children, and infants

Figure 42-11

Deliver abdominal thrusts to the supine unconscious patient (*Michal Heron/Pearson Education, Inc.*).



Medical Emergencies (61 of 189)

- Respiratory Distress
 - May be a reaction to a long-term debilitating disease
 - May be a reaction to an emergency situation
 - May be because of other obstructive conditions
 - Conscious control usually not a factor
 - Signs and symptoms vary depending on cause

Medical Emergencies (62 of 189)

- Respiratory Distress
 - Inability to get enough oxygen causes extreme anxiety
 - Occluded airway is a serious condition that causes the patient to grasp at the neck and attempt to cough
 - Unconsciousness soon follows, then cardiac arrest

Medical Emergencies (63 of 189)

- Other conditions of respiratory distress may cause symptoms such as:
 - Acute anxiety with gasping breaths
 - Bradypnea
 - Cyanosis
 - Failure of the chest to rise and fall

Medical Emergencies (64 of 189)

- Other conditions of respiratory distress may cause symptoms such as:
 - Nasal flaring
 - Pursing of the lips
 - Noisy breathing
 - Tachypnea

Medical Emergencies (65 of 189)

- Asthma Attack
 - Shares symptoms with other respiratory conditions
 - Coughing, wheezing, shortness of breath, and chest tightness
 - Treatment
 - Acute: short-acting Beta2agonists in inhalers
 - Long-acting: corticosteroid treatments

Medical Emergencies (66 of 189)

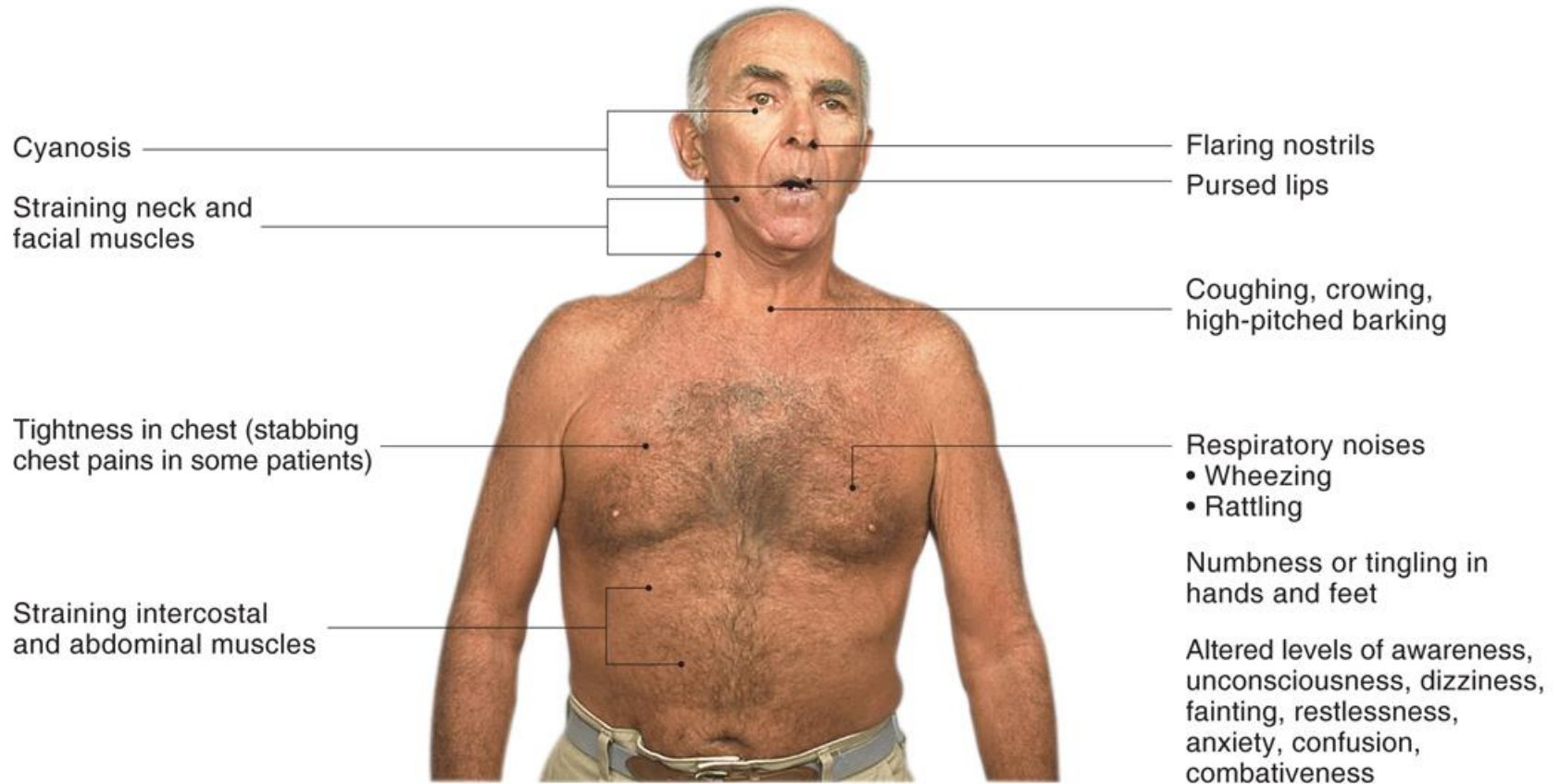
- Shortness of Breath (SOB)
 - Patient needs immediate intervention
 - Ask the patient about the onset of difficult breathing and what activity caused it
 - Usually patient sits in an upright position and may be quite weak

Medical Emergencies (67 of 189)

- Shortness of Breath (SOB)
 - Patient may cough in an attempt to clear air passages
 - Call out for assistance if needed

Figure 42-12

Signs and symptoms of breathing difficulty (Michal Heron/Pearson Education, Inc.)



Medical Emergencies (68 of 189)

- Hyperventilation
 - Patient feels light-headed; may experience:
 - Chest tightness
 - Cardiac palpitations
 - Rapid pulse
 - Deep sighing breaths
 - Anxiety

Medical Emergencies (69 of 189)

- Hyperventilation
 - Inform physician
 - Encourage patient to breathe deeply
 - Condition can generally be resolved quickly

Medical Emergencies (70 of 189)

- Chronic Obstructive Pulmonary Disease
 - Asthma, chronic bronchitis, and emphysema
 - Air is trapped in the lungs and patient is unable to expel all the carbon dioxide from the alveoli

Medical Emergencies (71 of 189)

- Chronic Obstructive Pulmonary Disease
 - Person with COPD has SOB, a rapid heart rate, and experiences weakness
 - Asthma may be characterized by audible wheezes, diaphoresis, and tightness in the chest

Medical Emergencies (72 of 189)

- Chronic Obstructive Pulmonary Disease
 - Inform the physician in all cases and, if ordered, administer oxygen
 - Physician may order medications to be administered, oxygen to be delivered, or transport to an emergency facility by EMS

Medical Emergencies (73 of 189)

- Pulmonary Edema
 - Fluid accumulation in the lung tissue and alveoli
 - Patient presents with
 - Difficulty breathing
 - Wheezing sounds
 - Cyanosis

Medical Emergencies (74 of 189)

- Pulmonary Edema
 - Fluid accumulation in the lung tissue and alveoli
 - Patient presents with
 - Rapid heartbeat
 - Distended neck veins
 - Extreme anxiety
 - Orthopnea

Medical Emergencies (75 of 189)

- Pulmonary Edema
 - Inform the physician
 - Place patient in a sitting position with feet and legs up on a bed or cart
 - Administer supplemental oxygen if ordered and available
 - Call EMS for transport to an emergency facility

Medical Emergencies (76 of 189)

- Chest Pain
 - Heart attacks are the leading cause of death for both men and women
 - Primary complaint is pain in the middle or left side of the chest, described as sharp, stabbing, crushing, squeezing, or aching

Medical Emergencies (77 of 189)

- Chest Pain
 - Pain may radiate to the left arm, to the back, or up the neck
 - Sometimes pain is brought on by exertion; other times onset is sudden and unexplained

Medical Emergencies (78 of 189)

- Chest Pain
 - Other symptoms
 - Nausea
 - Weakness
 - SOB
 - Apprehension
 - Feeling of impending doom

Medical Emergencies (79 of 189)

- Chest Pain
 - Skin may be clammy, moist, pale, or cyanotic
 - Denial is common

Medical Emergencies (80 of 189)

- Chest Pain

- Interventions

- Have individual stop what he/she is doing; sit down; elevate feet
 - Immediately request help from coworker
 - Inform the physician

Medical Emergencies (81 of 189)

- Chest Pain
 - Interventions
 - Call EMS if instructed by physician, or if physician is unavailable
 - Administer oxygen, if available, by nasal canula and according to office protocol

Medical Emergencies (82 of 189)

- Chest Pain

- Interventions

- If patient has nitroglycerin tablets, insert one tablet under the tongue
 - If pain is not relieved within 5 minutes, inform the physician or EMS on the scene
 - Have the patient chew 162 to 325 mg of uncoated aspirin

Figure 42-13

Nitroglycerin is administered sublingually (*Michal Heron/Pearson Education, Inc.*).



Medical Emergencies (83 of 189)

- If patient calls on the telephone complaining of chest pain:
 - Keep caller on the line while asking for help from other staff member
 - Write down caller's name and location
 - Follow office protocol regarding assisting patients with chest pain

Medical Emergencies (84 of 189)

- Shock may be the result of:
 - Anaphylaxis
 - Cardiac failure
 - Hemorrhage
 - Extreme emotional upset
 - Respiratory distress
 - Neurological collapse
 - Severe metabolic insult
 - Sepsis

Table 42-4 Signs and Symptoms of Shock Following a Crisis Situation

• Weakness	• Cool skin
• Rapid heartbeat	• Clammy skin
• Thirst	• Cyanosis
• Nausea	• Confusion
• Dizziness	• Disorientation
• Restlessness	• Unresponsiveness
• Pallor	• Shallow breathing

Medical Emergencies (85 of 189)

- Symptoms after initial shock crisis include:
 - Cool skin
 - Clammy skin
 - Cyanosis
 - Confusion
 - Disorientation
 - Unresponsiveness
 - Shallow breathing

Medical Emergencies (86 of 189)

- Anaphylactic Shock
 - Severe allergic reaction to a foreign substance
 - Examples of foreign substances: medications, bug bites, latex gloves
 - Inform the physician immediately; call EMS

Medical Emergencies (87 of 189)

- Anaphylactic Shock
 - Physician may order epinephrine with or without an antihistamine
 - IV may be started
 - Prevention is most important factor

Medical Emergencies (88 of 189)

- Anaphylactic Shock
 - Always ask patient about allergies to medications before administration; record on the front of the chart in red
 - Have patient wait in office 20 minutes after administering medication
 - Be alert to possible drug reactions; be prepared with emergency drug box

Medical Emergencies (89 of 189)

- Assisting Patients in Shock
 - Common signs of shock include:
 - Pale, gray, or bluish skin
 - Moist, cool skin
 - Dilated pupils
 - A weak, rapid pulse
 - Shallow, rapid respirations
 - Extreme thirst

Medical Emergencies (90 of 189)

- Assisting Patients in Shock
 - Immediate, aggressive intervention required
 - MA should ensure patient has open airway and proper circulation
 - Encourage patient to lie down

Medical Emergencies (91 of 189)

- Assisting Patients in Shock
 - Cover the patient with blanket for warmth
 - Keep the patient calm
 - Inform the physician; call EMS
 - Monitor vital signs
 - Provide emotional support

Procedure 42-5 Performing First Aid for a Person in Shock

Objective ♦ *Administer first aid for a person in shock correctly, within the time frame designated by the instructor.*

EQUIPMENT AND SUPPLIES

Blanket, examining table

METHOD

1. Assist patient to supine position.
2. If patient complains of cold or room is cold, apply blanket.
3. Loosen tight clothing.
4. Encourage patient to keep still and remain calm.
5. If patient vomits or bleeds from mouth, turn on side to prevent choking, unless you suspect spinal damage.
6. Perform CPR if needed.

7. Wash hands and document in patient chart.

CHARTING EXAMPLE

6/25/YY 11:30 A.M. Jason Blevins exhibited signs of shock after car accident in parking lot. Clover Bolgiano, RMA, alerted the physician and placed a call to 911. Patient was assisted to examination table, with feet elevated. Blanket applied. Patient remained calm under supervision of physician and Clover Bolgiano until EMS arrived and took Jason to the hospital.....J. Walker, CMA (AAMA)

Table 42-5 Treatment for Shock in the Medical Office

Cause	Treatment
Anaphylactic Shock	Epinephrine
Cardiogenic Shock	IV dopamine, immediate transport to the emergency department
Hemorrhagic Shock	Stop bleeding, replace volume, immediate transport to the emergency department
Hypovolemic Shock	Replace volume
Insulin Shock	Sugar given to patient by any means tolerated
Neurogenic Shock	IV dopamine, immediate transport to the emergency department
Poisoning	Consult the poison control center for treatment specific to the poison
Respiratory Shock	Intubation and immediate transport to the emergency department
Sepsis	Fluids, IV norepinephrine and immediate transport to the emergency department

Medical Emergencies (92 of 189)

- Diabetic Emergencies
 - Greatest risk is hypoglycemia
 - Can develop into insulin shock
 - Blood sugar falls below 70 mg per deciliter

Medical Emergencies (93 of 189)

- Diabetic Emergencies
 - Hypoglycemia may be result of:
 - Skipped meal
 - Vomiting after taking diabetic medications
 - Excessive exercise
 - Unknown reasons

Medical Emergencies (94 of 189)

- Diabetic Emergencies

- Patient may:

- Appear to be intoxicated (slurred speech, balance disturbances, and uncharacteristic behavior)
 - Have cold, clammy skin
 - Be anxious or combative

Medical Emergencies (95 of 189)

- Diabetic Emergencies
 - Intervention must be immediate; consists of some form of glucose administration
 - If conscious, ask patient about last intake of food and diabetic medication

Medical Emergencies (96 of 189)

- Diabetic Emergencies

- If patient is able to swallow, glucose paste may be placed inside the mouth behind the lip and along the cheek, or the patient may drink orange juice with added sugar

Medical Emergencies (97 of 189)

- Diabetic Emergencies
 - If patient is unconscious, IV glucose is administered
 - Person experiencing hypoglycemia is in grave danger when the blood glucose drops below 40 mg/dL

Medical Emergencies (98 of 189)

- Diabetic Emergencies
 - Brain requires glucose to survive; brain cells begin dying unless glucose is administered promptly
 - Blood glucose levels should be checked with a blood glucose monitor
 - Contact EMS if physician is not available to administer IV glucose

Medical Emergencies (99 of 189)

- Diabetic Emergencies

- Glucose may be administered if doubt about whether patient is hypoglycemic or hyperglycemic
 - Will raise glucose 25 to 50 points; rise can be reversed with an insulin injection as soon as an elevated glucose is diagnosed

Medical Emergencies (100 of 189)

- Diabetic Emergencies
 - Hyperglycemic individual may progress to an unconscious state; reversible with insulin

Medical Emergencies (101 of 189)

- Diabetic Emergencies
 - Physician orders amount and administration route of the insulin
 - Keep patient as warm and comfortable as possible on an examination table until the physician arrives

Procedure 42-6 Performing First Aid for Diabetic Shock/Diabetic Coma

Objective ♦ *Administer first aid for patient in diabetic shock, within the time frame designated by the instructor.*

EQUIPMENT AND SUPPLIES

Two glucose tablets, ½ cup fruit juice, ½ cup sugary soda, cup of milk, 1 tablespoon sugar, 1 tablespoon honey, 5-6 hard candies or ¼ cup raisins

METHOD

1. Identify signs and symptoms of diabetic shock to patient.
2. Assist patient to sitting position
3. Offer patient glucose tablet to put under tongue or one of these to drink: fruit juice, sugary soda, or milk or sugar cube, honey, candy, or raisins to eat if case is mild and patient is alert.
4. Check vital signs.

5. Assess blood sugar.
6. Monitor patient for time designated by instructor (representing time that may elapse before arrival of the physician or of EMS if a physician is not available.)
7. Wash hands and document in patient chart.

CHARTING EXAMPLE

3/14/YY 9:30 A.M. Carmen Spears presented with confusion, headache, shaking hands, and rapid heart rate (101). Assessed blood sugar through glucometer as 40. Administered ½ cup of orange juice. Vital signs 130/90 BP right arm, 86 pulse, 20 respirations, 98.8 temperature. Second blood sugar after 30 minutes was 89.....J. Walker, CMA (AAMA)

Medical Emergencies (102 of 189)

- Bleeding
 - External bleeding occurs when skin is broken
 - Internal bleeding occurs with tissue damage and intact skin
 - Can originate from arteries, veins, and capillaries

Medical Emergencies (103 of 189)

- Bleeding
 - Internal bleeding unlikely to be diagnosed in the medical office; requires advanced interventions to correct
 - External bleeding can be controlled if it occurs in the medical office

Medical Emergencies (104 of 189)

- Bleeding
 - Arterial bleeding
 - Usually copious, rapid, and bright red
 - Blood often spurts, echoing the heartbeat
 - Must be brought under control as soon as possible
 - Apply pressure directly over the wound

Medical Emergencies (105 of 189)

- Bleeding
 - Venous blood
 - Flows more slowly
 - Darker in color
 - Can usually be controlled by direct pressure

Medical Emergencies (106 of 189)

- Bleeding
 - Blood from capillaries
 - Oozes rather than flows
 - Can be halted with direct pressure
 - Bleeding from scalp or face usually copious

Medical Emergencies (107 of 189)

- Bleeding
 - Direct pressure applied by placing sterile dressing over wound and holding it in place with a gloved hand
 - Pressure bandage may be wrapped around injured part to maintain pressure on site

Figure 42-14

Apply direct pressure to the patient's wound (Luciano Cosmo/Shutterstock).



Medical Emergencies (108 of 189)

- Bleeding
 - Reinforce bandage if blood seeps through; apply more dressings and bandages over it
 - Do not remove original dressing
 - Exercise caution if fracture suspected
 - Activate EMS if bleeding cannot be controlled or if head/extremity fractures suspected

Medical Emergencies (109 of 189)

- Epistaxis
 - Nosebleeds are typically benign
 - Tend to occur most commonly in dry weather or in dusty conditions
 - Usually easy to treat
 - Nosebleed that occurs after a head injury and does not stop should be considered a serious emergency until proven otherwise

Critical Thinking Question (1 of 2)

1. What is the danger of persistent blood loss?

Medical Emergencies (110 of 189)

- Epistaxis
 - Persistent nosebleeds should cause worry if:
 - Patient has high blood pressure
 - Patient has clotting disorder
 - Patient has a history of nosebleeds that have caused shock in the past

Medical Emergencies (111 of 189)

- Epistaxis
 - Seat patient upright if vital signs are normal
 - Have patient lie on affected side if vital signs are compromised

Medical Emergencies (112 of 189)

- Epistaxis
 - Bleeding from both nostrils
 - Origin is somewhere above nose; requires immediate attention of physician
 - Bleeding from one nostril
 - Easily treated by physician

Medical Emergencies (113 of 189)

- Epistaxis
 - Electrocautery may be necessary if bleeding does not stop
 - If trauma is possible factor, physician may order contacting 911 and transport to ED

Medical Emergencies (114 of 189)

- Open Wounds
 - Seldom life threatening, unless they penetrate the head, chest, throat, or abdomen
 - Most typically require irrigation, debridement, sutures, and antibiotics

Medical Emergencies (115 of 189)

- Open Wounds
 - Wounds that involve important structures (e.g., eyes, nerve or muscle tissue) require specialized care
 - Some tissue injuries appear quite dramatic but heal well after treatment
 - MA can almost always control bleeding

Medical Emergencies (116 of 189)

- Abrasions
 - Occur when outer layer of skin is scraped away, leaving the underlying tissue exposed
 - Common terms for abrasions include friction burns, rug burns, road rashes, and scrapes

Medical Emergencies (117 of 189)

- Abrasions
 - Bleeding usually in the form of oozing
 - Injury is quite painful because nerve endings are exposed or damaged
 - Area is cleansed and any debris removed

Medical Emergencies (118 of 189)

- Abrasions
 - Antibacterial ointment may be applied to the area and covered with a sterile dressing
 - Large areas of abraded tissue may require burn treatment

Medical Emergencies (119 of 189)

- Lacerations

- Open wounds in which the skin and underlying tissue are torn
- Usually have jagged edges that may interfere with the healing process

Medical Emergencies (120 of 189)

- Lacerations
 - Bleeding must be controlled by direct pressure, pressure on pressure points, or eventual suturing or application of Steri-Strip
 - Cleanse with soap and water or antiseptic solution; remove all debris and foreign matter

Medical Emergencies (121 of 189)

- Lacerations

- Physician should direct cleaning process if bleeding is severe
- Minor lacerations
 - Wounds are approximated and then held together with a small dressing
- Lacerations over a joint may require joint immobilization for a few days

Medical Emergencies (122 of 189)

- Incisions
 - A type of laceration; cut with smooth edges made with a knife or other sharp object
 - Treated in the same manner as any other laceration

Medical Emergencies (123 of 189)

- Incisions
 - With deep or extensive wound, physician usually performs surgical intervention
 - With tendon or ligament damage, further surgical intervention is required

Medical Emergencies (124 of 189)

- Avulsions
 - Tearing away of skin or tissue
 - Usually occurs on limbs and appendages, including fingers, toes, hands, arms, feet, legs, nose, and penis

Medical Emergencies (125 of 189)

- Avulsions
 - Body part may become entangled in machinery or be injured in a motor vehicle accident or a confrontation with an animal
 - Cleanse with soap and water and return any skin flap to its normal position

Medical Emergencies (126 of 189)

- Avulsions
 - Apply direct pressure
 - Apply a dressing when bleeding is controlled

Medical Emergencies (127 of 189)

- Amputations

- If body part amputated and recovered, cleanse dismembered part with sterile saline
 - Wrap it with moist, sterile gauze
 - Seal in plastic bag
 - Place plastic bag in a cooler with ice
 - Do not place amputated part directly on ice or ice pack

Medical Emergencies (128 of 189)

- Amputations
 - Prompt medical attention enhances the chance for successful reattachment of amputated body part
 - Cover wound or stump with a sterile dressing until advanced treatment is available

Critical Thinking Question (2 of 2)

1. What do you do if someone's finger is not entirely amputated, but it is just hanging by some skin?

Medical Emergencies (129 of 189)

- Puncture Wounds
 - Result from a pointed foreign body penetrating the skin and tissue
 - Often the wound edges close, trapping pathogens and debris in the tissue
 - Cleansing may consist of soaking the area, or may require invasive irrigation
 - After cleansing, a dressing is applied
 - Bleeding is usually minimal

Medical Emergencies (130 of 189)

- Impaled Objects
 - Impaled patient requires special treatment
 - Leave object in place until it can be safely removed by trained personnel
 - Stabilizing object is critical to preventing further damage

Medical Emergencies (131 of 189)

- Impaled Objects

- Control bleeding and stabilize impaled object with bulky dressing held in place with tape
- Splint area to prevent movement
- Small paper cup may be used for small object

Medical Emergencies (132 of 189)

- Soft Tissue Injuries
 - Trauma involves both the skin and underlying tissue
 - Avulsions, amputations, and thermal insults are considered soft-tissue injuries
 - Contusions (bruises) are closed soft tissue wounds

Medical Emergencies (133 of 189)

- Soft Tissue Injuries
 - Crush Injuries
 - Result when force is applied to the tissue
 - Crush may be similar to pinching of tissue or it may be so severe as to involve organs and bones

Medical Emergencies (134 of 189)

- Soft Tissue Injuries
 - Crush Injuries
 - Elevating the body part above the heart and applying cold are often the only intervention needed
 - With a severe injury, the body part should be immobilized

Medical Emergencies (135 of 189)

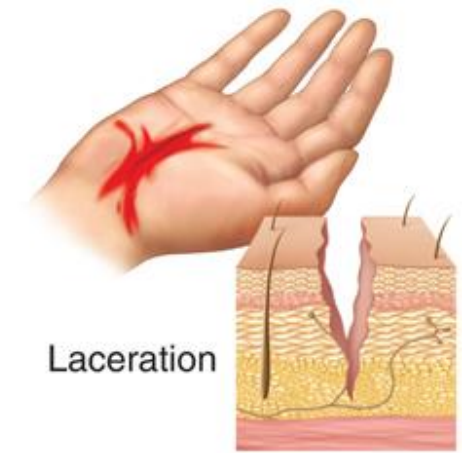
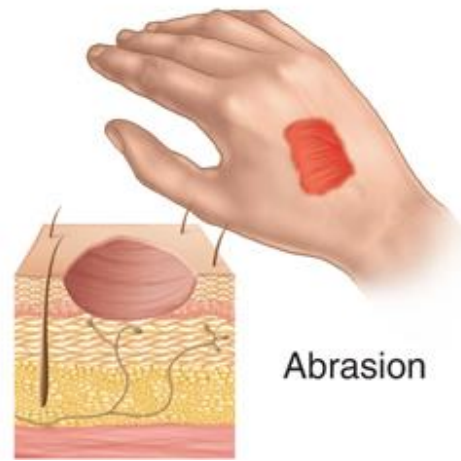
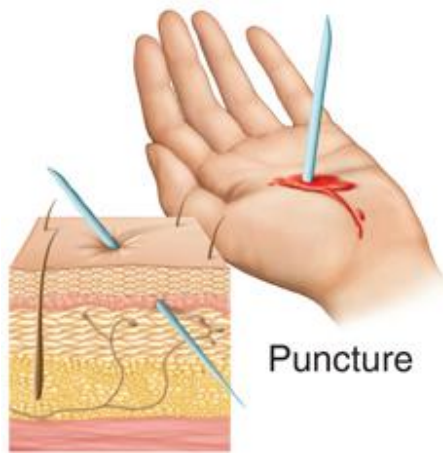
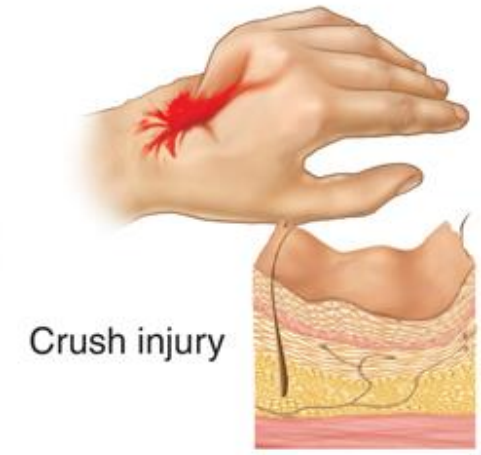
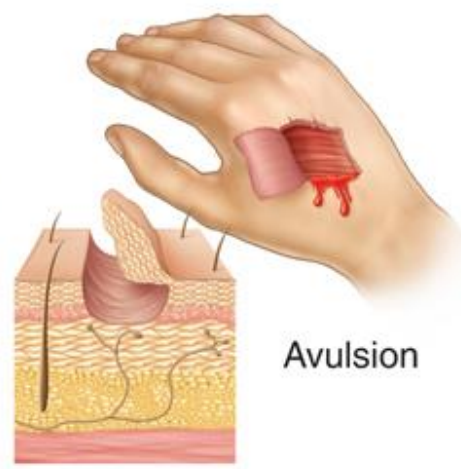
- Wound Care Pointers
 - Dressings come in many different forms
 - Sterile and nonsterile gauze (2 × 2s, 4 × 4s)
 - Compress (bulky sterile dressing to help control bleeding)
 - Occlusive (creates an airtight seal)

Medical Emergencies (136 of 189)

- Wound Care Pointers
 - Dressings come in many different forms
 - Petroleum (sterile gauze covered with petroleum that prevents the wound from sticking)
 - Premedicated and packed dressings (medicated gauze for application over a wound, or strips to pack into the wound)

Figure 42-15

Classification of open injuries.



Procedure 42-7 Applying a Pressure Bandage to Control Bleeding

Objective ♦ *Apply a pressure dressing.*

EQUIPMENT AND SUPPLIES

Dressing supplies or makeshift materials; gloves and other available PPE

METHOD

1. Escort the patient immediately to an examination room.
2. Perform hand hygiene.
3. Put on disposable gloves.
4. Under the physician's supervision, apply direct pressure with a dressing placed on the open wound. If possible, elevate the affected part.
5. After assessment, the physician will decide if EMS should be contacted.
6. Apply additional dressings as needed. Do not remove the original dressing.
7. Apply pressure to pressure points as necessary and with the physician's supervision.
8. If bleeding is controlled, anchor the dressing to maintain pressure.
9. If the physician orders, prepare the patient for transport to an emergency care facility.
10. Dispose of waste in a biohazard waste container.
11. Remove and discard gloves.
12. Perform hand hygiene and document the procedure in the patient's chart.

CHARTING EXAMPLE

08/31/YY 8:00 A.M. Pt came to office with 6" laceration to right forearm. Injury occurred from fight with 7-year-old brother when patient fell into glass patio door. Bleeding profusely. Physician called to examination room. B/P 96/60 P 100, regular but weak. R 26. Pt appears very nervous. Pt transported to ED to further control bleeding and take to surgery. Pt is alert and talking to parents.....S. Porter, CMA (AAMA)

Medical Emergencies (137 of 189)

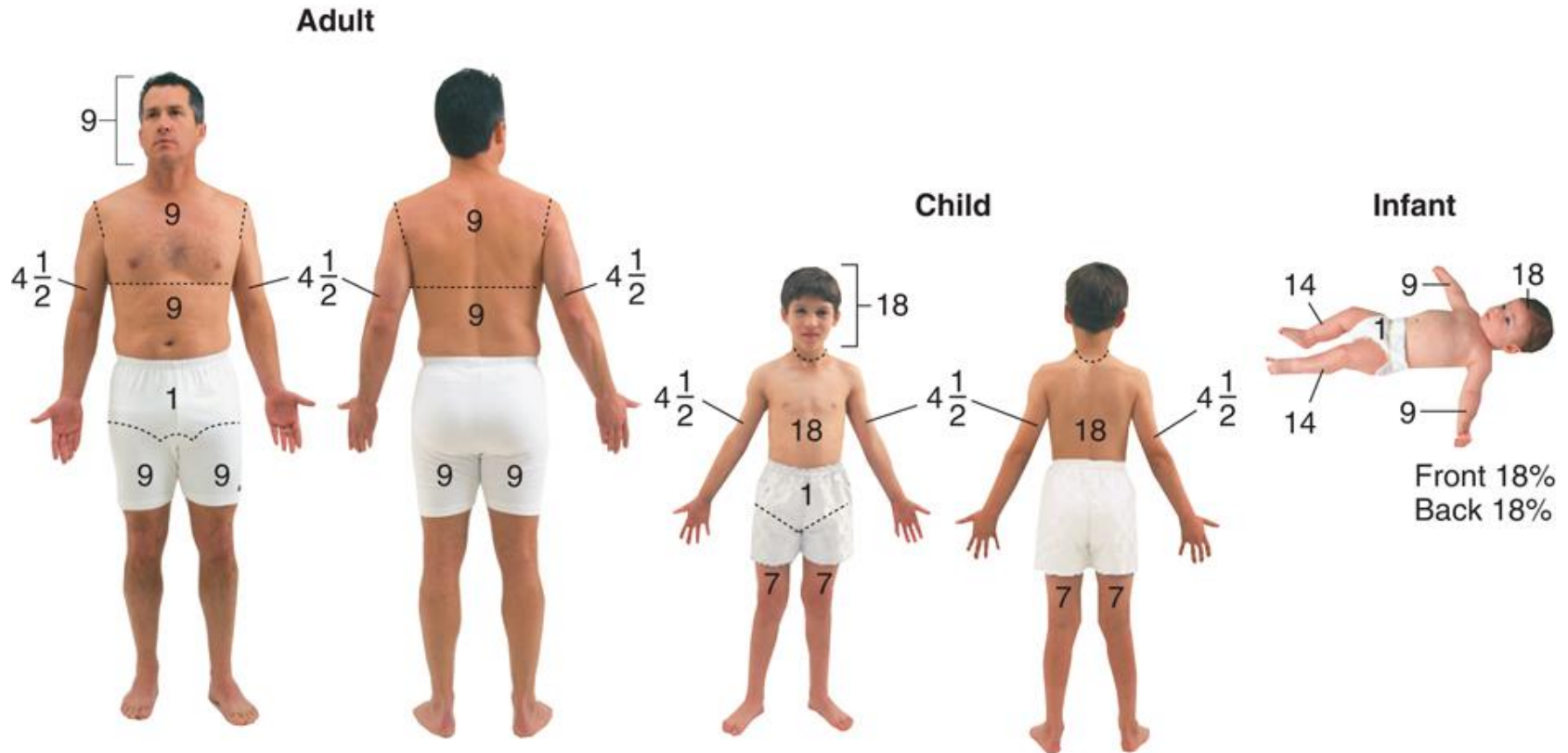
- Burns
 - Survival depends on those factors in addition to the amount of surface area that is destroyed
 - Skin functions lost because of destruction of skin surface
 - MA may help stop burning and remove any metal jewelry from burn patient

Medical Emergencies (138 of 189)

- Classification of Burns
 - Classified by surface area and by depth
 - **Rule of Nines** is a useful tool for estimating body surface area

Figure 42-16

Rule of Nine for burns (Pearson Education, Inc.).



Note: Each arm totals 9% (front of arm $4\frac{1}{2}\%$, back of arm $4\frac{1}{2}\%$)

Medical Emergencies (139 of 189)

- Classification of Burns
 - Superficial and partial thickness burns are extremely painful
 - Full thickness burns tend not to be painful immediately because sensory nerve endings have been destroyed

Table 42-6 Classification of Burns

Classification	Characteristics
Superficial Burn (First Degree)	Reddening, swelling of epidermis (like a mild sunburn)
Partial Thickness Burn (Second Degree)	Reddening, swelling of epidermis and outer dermis; blisters noted
Full Thickness Burn (Third Degree)	Charring of all layers of skin and at least some deeper structures
Full Thickness Burn (Fourth Degree)	Underlying muscle, tendons, ligaments and bone are damaged; very often fatal

Medical Emergencies (140 of 189)

- Classification of Burns

- Special Considerations

- Mortality of serious burns is higher for older adult patients and for very young patients
 - Mortality is higher if patient was burned in a closed area (partly because of the possibility of carbon monoxide poisoning and partly because of the possibility of airway burns)

Medical Emergencies (141 of 189)

- Classification of Burns

- Special Considerations

- Burns of the genitalia are always considered serious, regardless of depth
 - Always consider the possibility of other injuries besides burns, especially if the patient was burned in an auto or industrial accident

Medical Emergencies (142 of 189)

- Classification of Burns

- Special Considerations

- Patients with chemical burns should have the area irrigated immediately with large amounts of water
 - Burns from an alkali substance
 - Irrigation should be continued for a minimum of 20 minutes
 - Contact EMS immediately

Medical Emergencies (143 of 189)

- Classification of Burns
 - Special Considerations
 - Electrical burns that leave marks on the body are considered serious burns because of probability of internal injuries
 - Electrocution by lightning is always considered serious until proven otherwise

Medical Emergencies (144 of 189)

- Treatment for burns involving less than 10 percent of body surface area
 - Application of cool water
 - Analgesic creams and ointments if ordered by the physician

Medical Emergencies (145 of 189)

- Treatment for partial thickness burns
 - Cool water, as long as there are no broken blisters
 - Do not treat with creams or ointments because of potential for infection

Medical Emergencies (146 of 189)

- Treatment for full-thickness burns
 - Warrant treatment at trauma center or burn center
 - Dress with sterile dressings
 - Manage pain with injectable analgesics, as ordered
 - If patient will be transported, paramedics will start IV and administer analgesics if physician has not already done so

Medical Emergencies (147 of 189)

- Upper airway burns
 - Dire emergency; warrant prompt intubation by the physician or EMS with the largest tube that can be inserted
 - Burned epiglottis can swell quickly and make intubation very difficult or impossible

Medical Emergencies (148 of 189)

- Upper airway burns
 - Notify physician right away if patient is hoarse or complains of difficulty breathing
 - Notify physician if you notice singed hairs, eyebrows, or eyelashes
 - Administer oxygen as ordered by physician

Medical Emergencies (149 of 189)

- Large-surface area burns
 - Should be dressed with dry sterile sheets that are wrapped entirely around the patient's body
 - Patient should be promptly transported to a trauma center or burn center
 - Monitor for signs of shock, especially in the case of large surface-area involvement

Medical Emergencies (150 of 189)

- Heat- and Cold-Related Related Emergencies
 - Heat Exhaustion
 - Hyperthermia
 - Hypothermia

Medical Emergencies (151 of 189)

- Heat Exhaustion
 - Extreme fatigue caused by heat
 - Occurs as the result of sodium and water depletion from the body
 - Often preceded by strenuous activity

Medical Emergencies (152 of 189)

- Heat Exhaustion

- Symptoms

- Skin is moist, pale, and cool, and body temperature is normal
 - Individual may complain of headache, muscle cramps, weakness, dizziness, and nausea

Medical Emergencies (153 of 189)

- Heat Exhaustion

- Treatment

- Move person to a cooler environment
 - Encourage individual to lie down
 - Apply cool compresses
 - Give sips of water if the individual is conscious

Medical Emergencies (154 of 189)

- Heat Exhaustion
 - Can usually be prevented by taking salt pills and drinking a lot of water before, during, and after strenuous activities in a warm environment

Medical Emergencies (155 of 189)

- Hyperthermia
 - Prolonged exposure to extremely hot temperatures often results in an elevated body temperature
 - Loss of water and salt through perspiration leads to a state of mild shock

Medical Emergencies (156 of 189)

- Hyperthermia
 - If the body's cooling mechanisms fail, heat exhaustion can progress into heat stroke
 - Individual experiencing heat stroke usually fails to perspire; has a body temperature of 105°F or higher

Medical Emergencies (157 of 189)

- Hyperthermia
 - Symptoms
 - Skin is dry, red, and hot to the touch
 - Headache
 - Shortness of breath
 - Nausea or vomiting
 - Dizziness
 - Weakness
 - Dry mouth

Medical Emergencies (158 of 189)

- Hyperthermia

- Symptoms

- Pulse rapid at onset; gradually slows and becomes weak
 - Blood pressure begins to drop
 - Mental confusion may appear, possibly accompanied by irritability and hysterical behavior

Medical Emergencies (159 of 189)

- Hyperthermia

- Symptoms

- In some cases, the patient collapses
 - Continued exposure to heat results in brain cells dying and permanent brain damage/death

Medical Emergencies (160 of 189)

- Hyperthermia

- Treatment

- Remove the patient from the environment immediately
 - Loosen the clothing
 - Cool the body down as quickly as possible by pouring cool water over the patient or sponging with a cool, wet cloth

Medical Emergencies (161 of 189)

- Hyperthermia
 - Treatment
 - Contact EMS if heat stroke is suspected
 - Do not leave the patient alone
 - The patient should be promptly assessed by physician

Medical Emergencies (162 of 189)

- Hypothermia
 - Results from prolonged exposure to cold or cold water
 - Can cause the core temperature to drop below 95°F
 - Places the patient at great risk

Medical Emergencies (163 of 189)

- Hypothermia
 - Symptoms
 - Shivers
 - Numbness and tingling over the body
 - Skin becomes very cool to the touch and is pale with a blue or ashy tinge

Medical Emergencies (164 of 189)

- Hypothermia
 - Symptoms
 - Respirations are slow and shallow
 - Disorientation
 - Unconsciousness as body functions and organs slow down to the point of complete shutdown

Medical Emergencies (165 of 189)

- Hypothermia
 - Treatment
 - Remove any cold, wet clothing and wrap the patient in warm blankets
 - Heat packs may be used, but not directly on the skin

Medical Emergencies (166 of 189)

- Hypothermia
 - Treatment
 - Once the patient is conscious, offer sips of warm liquid
 - When possible, the patient should be transported to a treatment facility for assessment by a physician

Medical Emergencies (167 of 189)

- Seizures

- Produced by disorganized electrical activity in the brain
- Characterized by involuntary muscle contractions that alternate between the contraction and relaxation of muscles
- In some cases, the convulsions are generalized, involving the entire body, or localized and limited to a specific area of the body

Medical Emergencies (168 of 189)

- Seizures
 - Can result from a number of problems or combinations of problems
 - By themselves, convulsions are not life threatening.

Medical Emergencies (169 of 189)

- Seizures
 - Muscle spasms that come with full-body seizures can restrict breathing
 - Seizure patients may bite their tongues causing bleeding and swelling, which can obstruct the airway

Medical Emergencies (170 of 189)

- Seizures
 - Seizure patients are sometimes injured when their convulsions cause them to fall
 - Patient may remain unconscious for as long as 15 minutes once seizure stops; most patients cannot control secretions

Medical Emergencies (171 of 189)

- Seizures
 - MA must prevent injuries
 - Pay close attention to what the patient is experiencing in order to be able to describe it later

Medical Emergencies (172 of 189)

- Seizures
 - Notify physician immediately
 - If physician is unavailable, contact EMS and anticipate transport
 - Continue to assess patient until EMS personnel arrive
 - Communicate findings to EMS personnel

Procedure 42-8 Performing First Aid for a Patient Having a Seizure

Objective ♦ *Administer first aid for a patient having a seizure, in the time frame designated by the instructor.*

EQUIPMENT AND SUPPLIES

None

METHOD

1. Identify that patient is having a seizure.
2. Assist patient to the floor, protecting the head and assuring no hard or sharp objects nearby can injure them.
3. Loosen clothing around the neck.
4. After seizure, lay patient on side, and monitor and reassure patient.
5. If seizure lasts more than five minutes, call 911.

6. Wash hands and document in patient chart.

CHARTING EXAMPLE

2/28/XX 3:30 P.M. Heidi Haldeman began seizing while seating in examining room. Assisted patient to the floor, protecting the head from trauma. Loosened collar and monitored patient. Postseizure, patient began to vomit, so turned her on her side and offered emesis basin. Reassured and reoriented patient. Seizure lasted two minutes. Afterwards, patient complained of soreness and fatigue but was oriented x 3.....M. Jimenez, RMA.

Medical Emergencies (173 of 189)

- Fainting
 - Sudden loss of consciousness
 - Seems to be caused by a brief interruption in the body's ability to control the brain's circulation

Medical Emergencies (174 of 189)

- Fainting
 - Often occurs just after a patient has received an emotional shock of some kind
 - Patient usually collapses and becomes unresponsive; should awaken and return to normal function within a minute

Medical Emergencies (175 of 189)

- Fainting
 - Patients seldom become incontinent or have seizures as a result of simple fainting
 - Patients may be injured as a result of a fall

Medical Emergencies (176 of 189)

- Fainting
 - Unresponsiveness in patients
 - Determine reason
 - Take care of the ABCDs

Procedure 42-9 Responding to a Patient with Syncope

Objective ♦ *Correctly care for a patient with syncope, within the time limit set by the instructor.*

EQUIPMENT AND SUPPLIES

Blanket, small stool or box, ½ cup of orange juice, glucometer

METHOD

1. Identify signs of syncope.
2. Assist patient to supine position.
3. Elevate legs.
4. Loosen tight clothing and apply blanket if physician directs.
5. Assess patient for respirations, heart rate, chest pain, and consciousness.
6. If any of the following is present and the physician directs, call 911: blue lips or face, irregular or slow heart rate, chest pain, difficulty breathing, is difficult to awaken, or acts confused.

7. If none of the above are present, assess blood sugar and treat for hypoglycemia if appropriate.
8. Wash hands and document in patient chart.

CHARTING EXAMPLE

1/16/XX 9:30 A.M. Chester Tyler was found on the floor of the examining room. Assisted patient to supine position and loosened collar. Applied blanket and elevated feet. Patient's pulse was irregular and 55, and he was difficult to awaken. 911 immediately called. Physician and Jenny Erkfitz CMA (AAMA) remained with patient until EMS arrived five minutes later and took patient to hospital.....C. Glidewell, RMA

Medical Emergencies (177 of 189)

- Musculoskeletal Injuries
 - Involve bones, muscles, tendons, and ligaments
 - Include fractures, dislocations, sprains, and strains
 - Definitive diagnosis is made by X-ray
 - Must be considered fractured bones until determined to be otherwise

Medical Emergencies (178 of 189)

- Fractures

- Closed or simple fracture: the bone is broken but does not penetrate the skin
- Open or compound fracture: the bone pierces the skin, or the skin is torn open by the bone or by an external force

Medical Emergencies (179 of 189)

- Fractures

- Fractures may also be single or multiple breaks in the bone
- Bone breaks can be complete, twisted, or splintered

Figure 42-17

A closed fracture.



Medical Emergencies (180 of 189)

- Fractures

- Affected part is immobilized and examined for impaired circulation to the distal aspect
- Location of fracture and possible presence of heavy bleeding or bruising are also determined

Medical Emergencies (181 of 189)

- Fractures
 - Knowing the cause of the injury is very helpful in this assessment
 - May occur in any bone

Medical Emergencies (182 of 189)

- Fractures

- Special precautions must be taken for suspected fractures of the spinal column or skull
- If injury caused by sudden acceleration and deceleration, the cervical spine must be immobilized

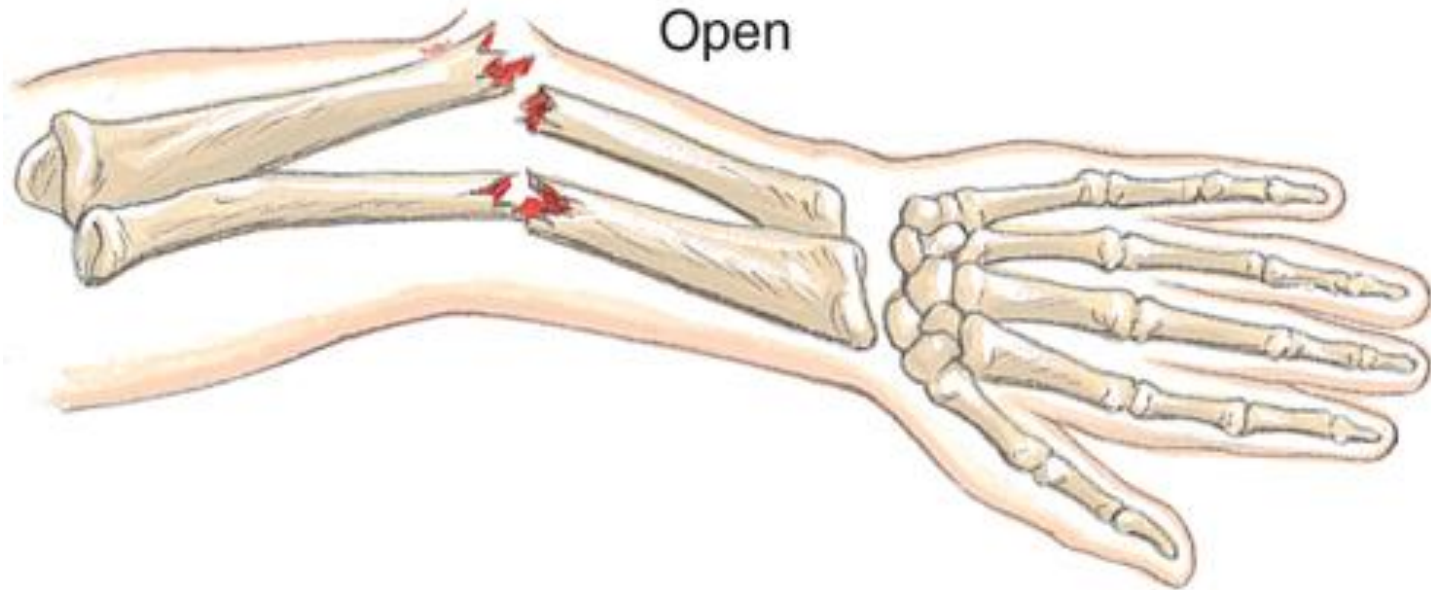
Medical Emergencies (183 of 189)

- Fractures

- Suspected fractures of the thigh and pelvis require immobilization and transport; best handled by the EMS
- In open or compound fractures, the soft-tissue injury must be tended

Figure 42-18

An open fracture.



Medical Emergencies (184 of 189)

- Splint Application
 - Fractures of long bones require immobilization by splinting to prevent joint movement above and below the fracture
 - Splint helps to relieve pain and allows safe movement of the injured part
 - The application of cold, usually after splinting, prevents swelling.

Medical Emergencies (185 of 189)

- Sprain
 - Occurs when muscles, tendons, or ligaments are torn
 - May be the result of trauma or cumulative overuse of the joint

Medical Emergencies (186 of 189)

- Strain
 - Often called a pulled muscle
 - Occurs when a muscle or tendon is overextended by stretching
 - Patient complains of pain; may be unable to use the joint
 - In lower extremities, weight-bearing is painful and sometimes impossible.

Medical Emergencies (187 of 189)

- Dislocations
 - Bone is pulled away from the joint, stretching or tearing the ligaments and tendons
 - Deformity is generally noted
 - Must be reduced, and the bone reinserted into the joint

Medical Emergencies (188 of 189)

- Dislocations
 - Injured body parts should be immobilized
 - Applications of cold help with pain and slow edema
 - Physician assesses injury

Medical Emergencies (189 of 189)

- Planning for Medical Emergencies in the Office
 - Important for physician and medical staff to develop a plan for medical emergencies that can occur in the office

Table 42-7 Response to Emergencies (1 of 2)

Emergency	Response
Poisoning	If you suspect poisoning because the patient states that they ingested a poison or have lost consciousness with a poison nearby, or are vomiting profusely, gather information about potential poisons by asking about the scene and circumstances. Encourage family to call, or call the National Poison Control Center at (800) 222-1222 and follow their instructions. Instructions may be to go to emergency room, ingest milk, hydrate with water, etc. It depends on the suspected poison and amount.
Stroke	If you suspect stroke, ask the patient to smile (F)—does one side of the face droop? Ask the patient to raise both arms (A)—does one arm drift downwards? Ask the patient to repeat a simple phrase (S)—does the speech seem slurred or strange? And (T) if you observe any of these signs, call 911 immediately. Immediate transportation to the hospital gives the patient access to thrombolytic (clot dissolving) drugs that can greatly reduce damage.
Animal Bite	If the bite is minor and barely breaks the skin, wash with soap and water and apply an antibiotic and bandage. For a deeper wound rabies is possible. Apply pressure with a clean dry cloth, and have the patient seen by a physician for possible treatment for rabies or tetanus. Also refer to a physician if you see signs of infection.

Table 42-7 Response to Emergencies

(2 of 2)

Emergency	Response
Insect Bite	For a mild bite, get to an area safe from further bites. If needed, remove stinger with a credit card or similar device. Wash with soap and water. Apply a cool compress. Apply hydrocortisone, pramoxine, or lidocaine to help control pain. Use creams such as calamine lotion or those containing colloidal oatmeal or baking soda to help soothe itchy skin. Treat for pain with a mild pain reliever like Tylenol. For more serious bites such as a scorpion sting, a bite on a child, or a bite that leads to anaphylaxis, contact 911. You may need to administer an epinephrine autoinjector for an allergic reaction. Hold the autoinjector against the thigh, and inject as indicated on instructions. Loosen tight clothing, cover with a blanket as needed, and monitor the patient. Do not give the patient anything to eat or drink. If vomiting or bleeding occurs, turn on the side. Perform CPR if needed.
Concussion	If concussion is suspected, have the person stop the activity and rest. Apply ice as needed. For pain, use Tylenol, aspirin, or ibuprofen. Monitor for at least 24 hours. Notify physician if: a headache gets worse, vomiting continues, drowsiness or dizziness increases, patient experiences increased confusion, or if a child will not nurse or eat or stop crying.

Procedure 42-11 Creating a Medical Emergency Plan

Objective ♦ *Create a medical emergency plan.*

EQUIPMENT AND SUPPLIES

Pen; paper; emergency kit composed of water, canned food, can opener, snacks, personal hygiene products, first aid kit, trash bag, gloves, battery-powered radio, flashlight, extra batteries, whistle, tools, protective masks, diapers, powdered milk, formula, baby wipes, crash cart

METHOD

1. Develop an emergency kit using the above listed supplies and any others you desire, explaining what each supply might be used for in an emergency.
2. Document a policy that would cover the actions needed in each of the following situations that might occur in the medical office.
 - a. Choking
 - b. Lack of pulse
 - c. Shortness of breath
 - d. Shock

- e. Bleeding
- f. Epistaxis
- g. Superficial burn
- h. Hyperthermia
- i. Seizures
- j. Fainting

3. Determine the best location to store your medical emergency policy and kit.
4. Develop a memorandum to the physician stating that you have developed the medical emergency plan.

DOCUMENTATION

12/6/YY 1:30 P.M. Medical emergency plan developed and posted at the reception desk on bright yellow paper. Medical emergency kit inventoried and stored in lowest drawer of receptionist's desk.....M. Schuknecht CMA (AAMA).

Questions?