Pre-Lecture

I. You Are the EMT

Time: 10 Minutes

Small Group Activity/Discussion

This exercise prompts reflection on the settings in which drug abuse takes place and the distinction between legal and illegal drugs.

Purpose

To allow students an opportunity to explore the significance and concerns associated with understanding and treating problems resulting from substance abuse.

Instructor Directions

1. Direct students to read the "You Are the EMT" scenario found at the beginning of Chapter 17.
2. You may wish to assign students a partner or group. Direct them to review the discussion questions at the end of the scenario and prepare a response to each question. Facilitate a class dialogue centered on the discussion questions.
3. You may also use this as an individual activity and ask students to turn in their comments on a separate piece of paper.

Lecture

I. Substance Abuse and Poisoning

Time: 5 Minutes

Slides: 1-3

Lecture/Discussion

A. Acute poisoning affects some 5 million children and adults each year.

B. Poisoning death rates for children have decreased steadily since the 1960s, when safety caps were introduced.

C. Poisoning deaths in adults have been rising, primarily as a result of drug abuse.

II. Identifying the Patient and the Poison

Time: 10 Minutes

Slides: 4-7

Lecture/Discussion

DOT Ref 4-6-I-A

Note: Verify local protocols for direct contact to poison control center or alternate destination sites.

A. Definition of poisoning and substance abuse

1. A poison is any substance whose chemical action can damage body structures or impair body function.
   a. Poisons act by changing the normal metabolism of cells or by actually destroying them.
   b. Poisons may act acutely, as in an overdose of heroin.
   c. Poisons may act chronically, as in years of alcohol or other substance abuse.
2. Substance abuse is the knowing misuse of any substance to produce a desired effect.

B. Signs and symptoms of poisoning vary according to the specific agent.

1. Pulse might speed up or slow down.
2. Pupils might dilate or constrict.
3. In patients with difficult respiration, cyanosis might occur.
4. Skin or mucous membranes might be irritated, burned, or blistered.
   a. This type of injury at the mouth indicates ingestion of poison, such as lye.
   b. Ask the following questions in these cases:
      1. What substances did you take?
      2. When did you take it (or become exposed to it)?
      3. How much did you ingest?
      4. What actions have been taken?
      5. How much do you weigh?

C. Determining the nature of the poison

1. Objects at the scene can help physicians determine how much poison has been ingested and what specific treatment may be required.
2. Place any suspicious material in a plastic bag and take to the hospital.
3. Take any containers you find to potentially provide critical information.
   a. Name and concentration of the drug
   b. Specific ingredients
   c. Number of pills originally in bottle
   d. Name of the manufacturer
   e. The dose that was prescribed
   f. For certain food poisonings, a food container that lists the name and location of the maker or the vendor, which may save life of patient and possibly other people.
4. Collect any vomitus and take to hospital.

D. Poison Control Centers

1. Staff have information on most substances.
2. Center has information available about emergency treatment and antidotes.
3. Medical control may consult a regional poison control center or divert you to a specialty treatment center for certain cases.

III. How Poisons Get Into the Body

Time: 45 Minutes
Slides: 8-11
Lecture/Discussion
DOT Ref 4-6-I-B
DOT Ref 4-6-I-C
DOT Ref 4-6-I-D
DOT Ref 4-6-I-E

A. Ingested poisons

1. Approximately 80% of all poisonings are by mouth.
2. Examples of ingested poisons include:
   a. Liquids
   b. Household cleaners
   c. Contaminated food
   d. Plants
   e. Drugs
3. Ingested poisoning is usually accidental in children and, except for contaminated food, deliberate in adults.
4. Treatment goal is to remove as much of the poison as possible from the gastrointestinal tract.
   a. Many EMS systems allow EMT-Bs to carry activated charcoal.
      1. Activated charcoal comes as a suspension.
      2. It binds to the poison in the stomach and carries it out of the system.
5. Always assess the ABCs of every patient who has been poisoned.
6. Be prepared to provide ventilatory support and CPR to a patient who has ingested an opiate, sedative, or barbiturate.
7. Each of these can cause depression of the central nervous system.

B. Inhaled poisons

1. Effects of inhaled poisons
   a. Some inhaled poisons, such as carbon monoxide, are odorless and produce severe hypoxia without damaging or even irritating the lungs.
   b. Other inhaled poisons, such as chlorine, are very irritating and cause airway obstruction and pulmonary edema.
   c. Some inhaled agents cause progressive lung damage.
2. Patients may report the following signs and symptoms:
   a. Burning eyes
   b. Sore throat
   c. Cough
   d. Chest pain
   e. Hoarseness
   f. Wheezing
   g. Respiratory distress
   h. Dizziness
   i. Confusion
   j. Headache
   k. Stridor in severe cases
   l. Possible seizure or an altered mental status
3. Treatment for patients who have inhaled poisons
   a. Move patients into fresh air immediately.
   b. Make certain that only trained rescuers remove the patient from the poisonous environment.
   c. Provide supplemental oxygen and basic life support, if necessary.
   d. All patients who have inhaled poison require immediate transport.
   e. Make sure a suctioning unit is available in case the patient vomits.
   f. Bring containers, bottles, and labels when you transport the patient to the hospital.

C. Injected poisons

1. Almost always the result of a deliberate drug overdose
2. Signs and symptoms of poisoning by injection can have a multitude of presentations, including:
   a. Weakness
   b. Dizziness
   c. Fever

   d. Chills
   e. Easy excitability
   f. Unresponsiveness
3. Injected poisons are impossible to dilute or remove.
4. Usually absorbed quickly into the body or cause intense local tissue destruction
5. Treatment for patients who have injected poisons
   a. Monitor the patient's airway.
   b. Provide high-flow oxygen.
   c. Be alert for nausea and vomiting.
   d. Remove rings, watches, and bracelets from areas around the injection site if swelling occurs.
   e. Provide prompt transport.

D. Absorbed (surface contact) poisons

1. Many corrosive substances will damage the skin, mucous membranes, or eyes, causing chemical burns, telltale rashes, or lesions.
2. Acids, alkalis, and some petroleum (hydrocarbon) products are very destructive.
3. Signs and symptoms of absorbed poisoning
   a. History of exposure
   b. Liquid or powder on a patient's skin
   c. Burns
   d. Itching
   e. Irritation
   f. Redness of the skin in light-skinned individuals
   g. Typical odors of the substance
4. Emergency treatment
   a. Avoid contaminating yourself or others.
   b. Remove the irritating or corrosive substance from the patient as rapidly as possible.
   c. Remove all clothing that has been contaminated.
   d. Dust off any dry chemicals.
   e. Flush skin with running water.
   f. Wash with soap and water.
   g. When a large amount of material has been spilled, flood the affected part for at least 20 minutes.
   h. If the patient has a chemical agent in the eyes
      1. Irrigate them quickly and thoroughly
      2. At least 5 to 10 minutes for acid substance
      3. 15 to 20 minutes for alkalis
      4. Make sure that the fluid runs from the bridge of the nose outward.
   i. Many chemical burns occur in industrial settings
      1. Showers and specific protocols are available.
      2. Wash the substance off immediately with lots of water.
   j. The only time you should not irrigate the contact area with water is when the poison reacts violently with water.
      1. Phosphorus or elemental sodium ignite when they come into contact with water.
      2. Brush the chemical off.
      3. Remove contaminated clothing.
      4. Apply a dry dressing.
      5. Wear gloves and the proper protective clothing.
      6. Provide prompt transport.

IV. Emergency Medical Care

Time: 15 Minutes

Slides: 12-15

Lecture/Discussion

DOT Ref 4-6-III

Note: Identify local protocols for EMT-B administration of activated charcoal.

A. External decontamination is important.

B. Treatment focuses on support: assessing and maintaining the ABCs.

C. Some cases will involve the administration of activated charcoal to patients who have ingested poison (approved by local protocols).

1. Charcoal is not indicated for the following patients:
   a. Patients who have ingested an acid, alkali, or petroleum product
   b. Patients who have a decreased level of consciousness
   c. Patients who are unable to swallow
2. Common trade names for the suspension form
   a. InstaChar
   b. Actidose
   c. LiquiChar
3. Usual dosage is 1 g of activated charcoal per kilogram of body weight.
   a. Usual adult dose is 25 to 50 g.
   b. Usual pediatric dose is 12.5 to 25 g.
4. Administering charcoal
   a. Before you administer charcoal, obtain approval from medical control.
   b. Shake the bottle vigorously.
   c. Cover the outside of the container so that the fluid is not visible.
   d. Ask the patient to drink with a straw.
   e. If the patient takes a long time to drink, you will have to shake the container frequently.
   f. Record the time when you administered the activated charcoal.
   g. If the patient has ingested a poison that causes nausea, he or she may vomit after taking activated charcoal.
   h. In these cases, repeat the dosage.
   i. Be prepared for vomiting, nausea, and possible airway problems.

V. Specific Poisons

Time: 45/75 Minutes

Slides: 16-36

Lecture/Discussion

Table 17-1: Toxidromes: Typical Signs and Symptoms of Specific Drug Overdose

Table 17-2: Common Opioid Drugs

Table 17-3: Examples of Sedative-Hypnotic Drugs

Table 17-4: Street Names for Amphetamines

Table 17-6: Fatal Ingested Poisons

A. Developing a tolerance or an addiction to a substance

1. Tolerance: When, over time, a person who routinely misuses a substance needs increasing amounts of it to achieve the same result
2. Addiction: Someone with an addiction has an overwhelming desire or need to continue using the agent.
   a. Increasing tolerance can lead to addiction.
   b. In addition to classic drugs of abuse, such as cocaine, almost any substance can be abused.
      1. Laxatives
      2. Nasal decongestants
      3. Vitamins
      4. Food
3. Known drug abusers have a fairly high incidence of serious and undiagnosed infections, including AIDS and hepatitis.
4. Always be sure to wear appropriate protective equipment.

B. Alcohol

1. It is the most commonly abused drug in the United States.
   a. Affects people from all walks of life
   b. Kills more than 200,000 each year
   c. More than 50% of all traffic fatalities or injuries, 67% of murders, and 33% of suicides are related to alcohol.
2. Characteristics and effects of alcoholism
   a. Alcohol is a powerful CNS depressant.
      1. It is a sedative, a substance that decreases activity and excitement
      2. It is also a hypnotic, which induces sleep.
   b. A person who appears intoxicated may have other medical problems, as well.
      1. Look for signs of head trauma, toxic reactions, or uncontrolled diabetes.
      2. Severe acute alcohol ingestion may cause hypoglycemia.
3. Actions
   a. Assume that all intoxicated patients are experiencing a drug overdose and require examination by a physician.
   b. Provide respiratory support for patients who exhibit signs of serious CNS depression.
      1. Depression of the respiratory system can cause emesis, or vomiting.
      2. May be very forceful or even bloody (hematemesis), since large amounts of alcohol irritate the stomach.
4. A patient in alcohol withdrawal may experience frightening hallucinations or delirium tremens (DTs).
   a. Characteristics of the DT syndrome
      1. Agitation and restlessness
      2. Fever
      3. Sweating
      4. Confusion and/or disorientation
      5. Delusions and/or hallucinations
      6. Seizures
   b. DTs may develop 1 to 7 days after a person stops drinking or when consumption levels are decreased suddenly.
   c. A person who is experiencing hallucinations or DTs is extremely ill.
      1. Provide prompt transport.
      2. Should seizures develop, treat them as you would any other seizure.
      3. Give oxygen.
      4. Watch for vomiting.
   d. These patients may not respond appropriately to suggestions or conversation.
   e. Your approach should be calm and relaxed.

C. Opioids

1. The pain relievers called opioid analgesics are named for the opium in poppy seeds, the origin of heroin, codeine, and morphine.

2. Most of these drugs have legitimate medical uses.
    a. Codeine
    b. Morphine
    c. Synthetic opioids
        1. Meperidine (Demerol)
        2. Hydromorphone (Dilaudid)
        3. Propoxypyhene (Darvon)
        4. Oxycodone (Percocet)
        5. Hydrocodone (Vicodin)
        6. Methadone
    d. Exception is heroin, which is illegal
3. Many addicts may have started using opioids with an appropriate medical prescription.
4. These agents are CNS depressants and can cause severe respiratory depression.
5. Administered intravenously, they produce a characteristic “high” or “kick.”
6. Tolerance to these drugs develops rapidly.
7. Emergency medical problems are caused by respiratory depression.
8. Patients typically appear sedated, cyanotic, and have pinpoint pupils.
9. Treatment
    a. Support the airway and breathing.
    b. You may try to arouse patients by talking loudly or shaking them gently.
    c. Always give supplemental oxygen.
    d. Be prepared for vomiting.
    e. Only effective antidotes are certain narcotic antagonists such as naloxone (Narcan), which is usually administered by paramedics or in the emergency department.

D. Sedative-hypnotic drugs

1. Barbiturates and benzodiazepines have been a part of legitimate medicine for a long time.
    a. These drugs are CNS depressants and alter level of consciousness.
    b. Effects similar to those of alcohol
    c. The patient may appear drowsy, peaceful, or intoxicated.
2. Possible situations
    a. Less likely to treat an acute overdose in someone who chronically abuses these drugs
    b. More likely to be called to a scene of an attempted suicide in which the patient has taken large quantities of these drugs
    c. These patients will have marked respiratory depression and may even be in a coma.
    d. Sedative-hypnotic drugs may also be given to people unknowingly as a “knock-out” drink, or “Mickey Finn.”
    e. Drugs such as Rohypnol have been abused as a “date rape drug.”
3. Treatment
    a. General treatment is to provide airway clearance, ventilatory assistance, and prompt transport.
    b. Specific antidote for acute benzodiazepine overdose is Flumazenil.
        1. It is given intravenously by a doctor.
        2. It is administered in the hospital after a physician’s assessment.
    c. As multi-drug use becomes more common, you may find it increasingly difficult to determine what agents the patients have taken.
        1. Treat any obvious injuries or illnesses.
        2. Keep in mind that drug use may complicate the picture and make full life support necessary.
    d. Focus on the following:
        1. ABCs, especially the possibility of airway problems
        2. Dealing with vomiting
        3. Handling respiratory depression
        4. Being prepared for cardiac arrest

E. Abused inhalants

1. Many abused inhalants produce several of the same CNS effects as other sedative-hypnotics.
2. Some common agents found in glues, cleaning compounds, paint thinners, and lacquers
    a. Acetone
    b. Toluene
    c. Xylene
    d. Hexane
3. Gasoline and various halogenated hydrocarbons, such as Freon, used as propellants in aerosol sprays
4. None of these inhalants is a medication.
5. Teenagers seeking an alcohol-like high commonly abuse them.
6. Effects
    a. Effects range from mild drowsiness to coma
    b. May often cause seizures
    c. Halogenated hydrocarbon solvents can make the heart supersensitive to the patient's own adrenaline.
    d. Patient is at high risk for sudden cardiac death.
    e. Even the action of walking may release enough adrenaline to cause a fatal ventricular arrhythmia.
7. Emergency medical care
    a. Use special care in dealing with patients who may have used inhalants.
    b. Try to keep such patients from struggling or exerting themselves.
    c. Give supplemental oxygen, and use a stretcher to move patients.
    d. Prompt transport is essential.
    e. Monitor vital signs en route.

F. Sympathomimetics

1. CNS stimulants ("uppers")
    a. Agents that produce an excited state
    b. Frequently cause hypertension, tachycardia, and dilated pupils
2. Effects
    a. Users of these agents may display disorganized behavior, restlessness, and sometimes anxiety or great fear.
    b. Paranoia and delusions are common with sympathomimetic abuse.
3. Amphetamine and methamphetamine ("ice")
    a. Commonly taken by mouth
    b. Also injected in many cases
    c. Typically taken to make the user "feel good," improve task performance, suppress appetite, or prevent sleepiness
4. Cocaine
    a. Classically inhaled into the nose and absorbed through the nasal mucosa
    b. Damages tissues, causes nosebleeds, and ultimately destroys the nasal septum
    c. Also injected intravenously or subcutaneously (skin-popping)
    d. Another method of abusing cocaine is by smoking it.
        1. Crack is pure cocaine and is easily smoked.
        2. Smoked crack produces the most potent effect.
    e. One of the most addicting substances known
    f. Acute cocaine overdose is a genuine emergency.
    g. Patients are at high risk for seizures and cardiac arrhythmias.
5. Care for patients who have been poisoned with any sympathomimetic
    a. Be aware that severe agitation can lead to tachycardia and hypertension.
    b. Patients may also be paranoid, putting you and other health care providers in danger.
    c. Law enforcement officers should be at the scene to restrain the patient, if necessary.
    d. Do not leave the patient unattended and unmonitored during transport.

e. All of these patients need to get to the emergency department promptly.
f. Give supplemental oxygen and be ready to provide suctioning.

G. Marijuana

1. An estimated 20 million people use marijuana daily in the United States.
2. Effects
   a. Inhaling produces euphoria, relaxation, and drowsiness.
   b. Impairs short-term memory and the capacity to do complex thinking and work
   c. In some people, euphoria progresses to depression and confusion.
   d. Altered perception of time is common.
   e. Anxiety and panic can occur.
   f. With very high doses, patients experience hallucinations.
3. A person who has been using marijuana rarely needs transport.
4. Exceptions may include someone who is hallucinating, very anxious, or paranoid.
5. Marijuana is often used as a vehicle to get other drugs into the body, (ie, it can be covered with PCP or crack).

H. Hallucinogens

1. Hallucinogens alter an individual's sense of perception.
2. Classic hallucinogen is lysergic acid diethylamide (LSD).
3. PCP ("angel dust") is a dissociative anesthetic that is dangerous, causing severe behavioral changes.
4. Effects
   a. Visual hallucinations
   b. Intensified vision and hearing
   c. Users feel separated from reality.
   d. Altered sensory state is not always pleasurable, can be terrifying or a "bad trip."
   e. Patient will usually be hypertensive, tachycardic, anxious, and probably paranoid.
5. Emergency medical care
   a. Use same care as for a patient on a sympathomimetic.
   b. Use a calm, professional manner.
   c. Provide emotional support.
   d. Do not use restraints unless you or the patient is in danger of injury and then always within the guidelines.
   e. Watch the patient carefully during transport.
   f. Never leave a patient unattended and unmonitored.

I. Anticholinergic agents

1. The classic picture of too much anticholinergic medication is "hot as a hare, blind as a bat, dry as a bone, red as a beet, and mad as a hatter."
2. These drugs block the parasympathetic nerves.
3. Common medications
   a. Atropine
   b. Diphenhydramine (Benadryl)
   c. Jimsonweed
   d. Certain cyclic antidepressants
4. Overdoses
   a. With the exception of jimsonweed, these medications usually are not abused drugs but may be taken as an intentional overdose.
   b. Often difficult to distinguish between an anticholinergic overdose and a sympathomimetic overdose.
   c. In both, patients may be agitated and tachycardic and have dilated pupils.
   d. Cyclic antidepressant overdose may cause more serious, life-threatening effects.
   e. The medication may block the electrical conduction system in the heart, leading to lethal cardiac arrhythmias.
5. Emergency medical care

a. Patients with acute cyclic antidepressant overdose must be transported immediately.
b. They may go from appearing "normal" to seizure and death within 30 minutes.
c. If you work in a tiered system, consider calling for ALS backup when you are en route to the scene.

J. Cholinergic agents

1. Examples
   a. "Nerve gases" designed for chemical warfare
   b. Organophosphate insecticides
   c. Certain wild mushrooms
2. Effects
   a. Overstimulate normal body functions that are controlled by parasympathetic nerves
      1. Salivation
      2. Mucous secretion
      3. Urination
      4. Crying
      5. Heart rate
3. Signs and symptoms of cholinergic drug poisoning are easy to remember by two mnemonic devices.
   a. DUMBELS
      1. Defecation
      2. Urination
      3. Miosis (contraction of the pupils)
      4. Bronchorrhea (discharge of mucus from the lungs)
      5. Emesis
      6. Lacrimation (tearing)
      7. Salivation
   b. Alternatively, use SLUDGE
      1. Salivation
      2. Lacrimation
      3. Urination
      4. Defecation
      5. GI irritation
      6. Eye constriction
   c. In addition, patients may have either bradycardia or tachycardia.
4. Emergency medical care
   a. Most important consideration is to avoid exposure yourself.
   b. Field decontamination may take priority over immediate transport.
   c. Priority after decontamination is to decrease the secretions in the mouth and trachea.
   d. Provide airway support.
   e. Depending on local protocol, this can be treated as a HazMat situation.

K. Miscellaneous drugs

1. Aspirin
   a. Aspirin poisoning remains a potentially lethal condition.
   b. Effects
      1. Nausea
      2. Vomiting
      3. Hyperventilation
      4. Ringing in the ears
   c. Patients are frequently anxious, confused, tachypneic, and in danger of having seizures.
   d. Patients should be transported quickly.
2. Acetaminophen
   a. Acetaminophen is generally not very toxic.

b. Overdosing with acetaminophen is very common.
   1. Symptoms of an overdose generally do not appear until it is too late.
   2. Liver failure may not be apparent for a full week.
c. Patients may not provide the information necessary for a correct diagnosis.
d. Gathering information at the scene is very important.

3. Methyl alcohol and ethylene glycol
   a. Some alcohols, including methyl alcohol and ethylene glycol, are even more toxic than ethyl alcohol (drinking alcohol).
      1. Methyl alcohol is found in dry gas products and Sterno.
      2. Ethylene glycol is found in some antifreeze products.
   b. People at risk
      1. Chronic alcoholics who are unable to obtain drinking alcohol
      2. More often taken by someone attempting suicide
      3. Even ethyl alcohol—typical drinking alcohol—can stop a patient's breathing if taken in too high a dose or too fast, particularly in children.
   c. Effects
      1. Both cause a "drunken" feeling.
      2. If left untreated, both can cause:
         a. Severe tachypnea
         b. Blindness (methyl alcohol)
         c. Renal failure (ethylene glycol)
         d. Eventually death
   d. Immediate transport is essential.

L. Geriatric needs

1. Elderly patients may become confused about drug regimen and create an accidental overdose or poisoning.
2. Elderly patients may also intentionally overdose in an attempt to commit suicide.
3. Caustic substances may cause more damage to the stomach due to decreased gastric motility.
4. Small amounts of lung damage may cause severe problems due to changes in the respiratory system.
5. For poisons that are absorbed by or injected into the skin, watch for increased reaction or irritation at the skin site.
6. Drugs may stay in system longer due to decreased liver and kidney function, thus causing additional damage.

VI. Food Poisoning

Time: 10 Minutes
Slides: 37-38 Lecture/Discussion
Table 17-7: Common Sources of Food Poisoning

A. Almost always caused by eating food that is contaminated by bacteria, even though food may appear perfectly good, with little or no decay or odor to suggest danger.

B. Two main types of food poisoning

1. An organism, itself, causes disease.
   a. Salmonella bacterium is one organism that produces direct effects.
   b. Symptoms of salmonellosis
      1. Severe gastrointestinal symptoms within 72 hours of ingestion
      2. Nausea
      3. Vomiting
      4. Abdominal pain

5. Diarrhea

c. Some people are carriers of certain bacteria.
   1. May transmit diseases, particularly if they work in food services.
   2. Prevention
      a. Usually, proper cooking kills bacteria.
      b. Proper cleanliness in the kitchen prevents the contamination of uncooked foods.

2. More common cause of food poisoning is the ingestion of powerful toxins produced by bacteria, often in leftovers, that cause disease.
   a. Toxin: Poison or harmful substance produced by bacteria, animals, or plants.
   b. The bacterium Staphylococcus is quick to grow and produce toxins in foods that have been kept too long.
   c. Foods prepared with mayonnaise, when left unrefrigerated, are a common vehicle.
   d. Staphylococcal food poisoning typically results in sudden gastrointestinal symptoms
      1. Nausea
      2. Vomiting
      3. Diarrhea
   e. Symptoms may start within 2 to 3 hours after ingestion or as long as 8 to 12 hours after ingestion.
   f. The most severe form of toxin ingestion is botulism.
      1. Often-fatal disease usually results from eating improperly canned food.
      2. The spores of Clostridium bacteria grow and produce a toxin.
      3. Symptoms may develop as long as 4 days after ingestion or as early as the first 24 hours.

C. Emergency medical care

1. In general, do not try to determine the specific cause of acute gastrointestinal problems.
2. Gather as much history as possible.
3. Transport promptly.
4. If two or more persons have the same illness, bring some of the suspected food if possible.

VII. Plant Poisoning

Time: 5 Minutes

Slide: 39

Lecture/Discussion

Table 17-8: Common Toxic Plants

A. Several thousand cases of poisoning from plants occur each year, some severe.

B. Many household plants are poisonous if ingested.

1. Effects
   a. Local irritation of the skin
   b. Effects on circulatory system, gastrointestinal tract, and the central nervous system

C. Emergency medical care

1. Assess the patient's airway and vital signs.
2. Notify the regional poison center.
3. Take the plant to the emergency department.
4. Provide prompt transport.

D. Problem with diffenbachia, which resembles "elephant ears"

1. Irritates skin and/or mucous membranes

2. Chewing a single leaf may irritate the lining of the upper airway enough to cause difficulty in swallowing, breathing, and speaking.
3. In rare circumstances, the airway may be completely obstructed.
4. Treatment
   a. Maintain an open airway.
   b. Give oxygen.
   c. Transport the patient as promptly as possible.
   d. Continue to assess for airway difficulties throughout transport.

Post-Lecture

I. Prep Kit Activities

Time: 60 Minutes

Individual/Small Group Activity

Note: The Prep Kit contains various student-centered end-of-chapter activities designed as enhancement to the instructor's presentation. As time permits, these activities may be presented in class. They are also designed to be used as outside/homework activities.

A. Assessment in Action

This activity is designed to assist the student in gaining a further understanding of issues surrounding poisoning and substance abuse. The activity incorporates both critical thinking and application of basic EMT-B knowledge.

Purpose

This activity allows the student to analyze an emergency care scenario and develop responses to critical thinking questions.

Instructor Directions

1. Direct students to read the "Assessment in Action" scenario located in the Prep Kit at the end of Chapter 17.
2. For the quiz questions, direct students to read and answer the quiz questions at the end of the scenario. Allow approximately 10 minutes for this part of the activity. Facilitate a class review and dialogue of the answers, allowing students to correct their responses as needed. Use the quiz question answers noted below to assist in building this review. Allow approximately 10 minutes for this part of the activity.
3. You may also use this as an individual activity and ask students to turn in their comments on a separate piece of paper.

Answers to Multiple-Choice Questions

1. Answer: B Priorities are airway, breathing and circulation. Secure the airway and begin assisting respirations. A nonrebreathing mask is inappropriate for a respiratory rate of 6 breaths/min. Placing him in recovery position and covering him with a blanket does not treat his respiratory rate. Contacting medical control should be done after preliminary treatment is completed.
2. Answer: A IV drug use predisposes to infectious and communicable diseases, such as HIV, AIDS, and hepatitis. IV drug use does not affect the incidence of COPD, asthma, allergies, cancer, or ulcers.
3. Answer: A Narcotics or opioids typically cause pinpoint pupils with hypotension. Sympathomimetics and anticholinergics will cause tachycardia with hypertension, along with dilated pupils. Hallucinogens cause hallucinations but, while tachycardia may occur, usually do not depress respirations or blood pressure.
4. Answer: D Any unconscious patient will be at risk for vomiting, especially a patient with an overdose of alcohol, recreational drugs, or medication. This patient does not meet the criteria for the AED. There is no indication that trauma was involved therefore the cervical collar, backboard, and splinting are unnecessary.
5. Answer: B Collecting the vomitus for analysis is an important albeit unpleasant task. The easiest way to accomplish this is to collect the vomitus in the suction canister. Cleaning the patient prior to arrival is not necessary. Placing absorbent cotton in the patient's mouth is inappropriate and will obstruct the airway. Attempting to ventilate around the vomitus will lead to aspiration.

6. Answer: A An antidote will counteract effects. “Potentiate” and “additive” are terms that indicate the effects of the poison will be increased. An “idiosyncratic” effect is an unusual effect.
7. Answer: D A contraindication for activated charcoal is altered mental status or unconsciousness. This patient did not meet the criteria. Time is not an issue. When the patient meets the criteria, no additional equipment is needed to give activated charcoal in the field. Hospital permission is the decision of the medical director, and not universal.

Challenging Questions Answers

8. Answer: Ingestion is the most common, because it is the easiest.
9. Answer: Because the biggest problem with inhaled poisons is hypoxia. Moving the patient to fresh air is removing him or her from the source
of the poison and further exposure. Most patients also need supplemental oxygen.

B. Points to Ponder

This activity will allow you to help your students probe the more difficult situations that they might face. Use this as an opportunity to allow them to express difference of opinion and approach, while directing them to be thorough and decisive in their answers. Encourage challenges.

Purpose

To allow students an opportunity to apply critical thinking analysis to a given case study.

Instructor Directions

1. Direct students to read the “Points to Ponder” scenario found in the Prep Kit at the end of Chapter 17.
2. You may wish to assign students a partner or group and direct them to review the discussion question at the end of the scenario and prepare a response. Allow approximately 10 minutes for this part of the activity. Facilitate a class dialogue centered on the discussion point. Allow approximately 10 minutes for this part of the activity, as well.
3. You may also use this as an individual activity and ask students to turn in their comments on a separate piece of paper.
4. Personally review the scenario and discussion question based on your experience and knowledge as an emergency care worker. Develop your own key points for guiding this discussion.

Scenario

You are working for a very rural agency and have responded to a motorcycle accident where the motorcyclist received a fractured tibia and many abrasions. You have responded to this patient several times in the past for drug-related emergencies and overdoses. He did not appear high at this accident. About 20 minutes into your transport he begins to get agitated, and about 30 minutes into transport he starts moving around a lot and wants to get up. He explains that he needs to shoot up or he will go into withdrawal. He explains that his “stuff” is in his backpack that he brought along and asks if you will help him shoot-up. When you tell him that you cannot do that, he asks if you can just stop and get out and he will “take care of it” without you knowing. You still have 90 minutes before arriving at the hospital, and he is becoming more agitated and aggressive. Is there a time that you would let him shoot-up?

Issues

- Best Patient Care
- Safety Issues
- Patient Restraints
- Personal Biases and Prejudices

C. Online Outlook

This activity requires students to have access to the Internet. This may be accomplished through personal access, employer access, or through a local educational institution. Some community colleges, universities, or adult education centers may have classrooms with Internet capability that will allow for this activity to be completed in class. Check out local access points, and encourage students to complete this activity as part of their ongoing reinforcement of the basic EMT-B knowledge and skills.

Purpose

To provide students an opportunity to reinforce chapter material through use of online Internet activities

Instructor Directions

1. Use the Internet and go to www.emtb.com. Follow the directions on the web site to access the exercises for Chapter 17.
2. Review the chapter activities and take note of desired or correct student responses.
3. As time allows, conduct an in-class review of the Internet activity and provide feedback to students as may be needed.

4.Be sure to check the web site before assigning this activity, as specific chapter-related activities may change from time to time.

II. Lesson Review

Time: 10 Minutes

Discussion

Note: Facilitate a review of this lesson's major topics using the review questions as direct questions or overhead transparencies. Answers are found throughout the lesson plan with IRK references listed for each question.

A. What is a poison and how do poisons act? (Lecture II–A)
B. What five questions should be asked of any suspected poisoning victim? (Lecture II–B)
C. What information can be obtained from a medication container? (Lecture II–C)
D. By what four avenues do poisons generally enter the body? (Lecture III)
E. Describe the types of poisons commonly ingested. (Lecture III–A)
F. Describe common symptoms of and general treatment for a patient who has inhaled a poison. (Lecture III–B)
G. Why are injected poisons a treatment challenge? (Lecture III–C)
H. What is the general emergency treatment for a surface contact poison? (Lecture III–D)
I. How do you treat a chemical agent in the eyes? (Lecture III–D)
J. Describe the indications, contraindications, action, and dosage of activated charcoal. (Lecture IV–C)
K. In what class of drugs is alcohol? (Lecture V–B)
L. Describe delirium tremors. (Lecture V–B)
M. List some common substances, signs and symptoms of overdose, and general treatment guidelines for the drug classes opioid analgesics (Lecture V–C), sedative-hypnotics (Lecture V–D), inhalants (Lecture V–E), sympathomimetics (Lecture V–F), hallucinogens (Lecture V–H), anticholinergerics (Lecture V–I), and cholinergics (Lecture V–J).
N. What are the other drugs that present high risk for poisoning? (Lecture V–K)
O. What are the general types and presentations of food poisoning? (Lecture VI–B)
P. What are the steps for treating suspected plant poisoning? (Lecture VII–C)

III. Assignments

Time: 5 Minutes

Lecture

A. Review all materials from this lesson and be prepared for a lesson quiz to be administered (date to be determined by instructor.)
B. Read Chapter 18: *Environmental Emergencies* for the next class session.