OSHA

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

In this course, you will review:

- Bloodborne Pathogen Standard 1991
- Exposure Prevention
- Exposure
- Respiratory Illness
- Hazard Communication Standard
- Other Safety Matters

In this lesson, you will:

- Describe the requirements of the Bloodborne Pathogen Standard of 1991
- Identify the risks factors associated with bloodborne pathogens (HBV, HCV, and HIV)
- Described the statistical facts for the risk of infection
- Identify signs and symptoms of HIV
- Identify signs and symptoms of HCV
- Identify signs and symptoms of HBV
- Described HBV vaccination requirements

What regulation outlines what employers must do to reduce the risk and rate of exposure to HIV, HBV, and HCV?

- In December of 1991, the Bloodborne Pathogen Standard was created to protect employees from exposure to infectious diseases such as HIV, HBV, and HCV. Written plans, work practices, and engineering controls are examples of items employers must have in place to safeguard the worker against exposure to blood and body fluids

What are the three most common bloodborne diseases which could be contracted from exposure incidents; such as a needle stick or splash to the eyes?

- Human immunodeficiency virus (HIV)
- Hepatitis C virus (HCV)
- Hepatitis B virus (HBV)

What is the infection rate of HIV?

- 99.7% of individuals will not become infected with HIV if exposed.

What is the infection rate of hepatitis C virus if exposed?

- The rate of infection for hepatitis C (HCV) in the health care workforce is the same as the general population, 1.8%

What is the infection rate of hepatitis B virus if exposed?

- If the health care worker is exposed to hepatitis B, they may have up to a 30% chance of becoming infected if not vaccinated against hepatitis B or are a non-responder to the vaccine.

Risk Factors

- Exposures occur when the worker comes in contact with blood or OPIM through a splash to the eyes, nose, and mouth or to non-intact skin or though some sort of sharps injury. The worker's risk of becoming infected is impacted by the amount of blood involved in the incident, the viral load of the patient, and the type of virus the worker is exposed to.

Risk vs Exposure

- Splash to non-intact skin
- Type of exposure
- Type of virus
- Amount of virus in the patient's blood at the time of exposure
- Amount of blood or body fluids involved in the exposure
- Cuts from contaminated sharp objects
- Contact/splash to mucus membranes of the eyes, nose, and mouth
- Needle stick with contaminated needle

Risk vs Exposure

- The risk factors of infection vary greatly, depending on the type of exposure, the amount of blood involved in the exposure, the type of virus to which exposed, the disease progression in the infected patient, the type of transmission, and the type of disease. Most exposures will NOT result in infection.

Statistical facts: HIV

- Over 1 million persons are affected with HIV
- 200,000 of those persons are not diagnosed
- 95 out of 100 HIV patients will never pass the virus on to another individual
- AIDS is an advanced stage of HIV when the patient's immune system becomes severely damaged and which may ultimately lead to death

Statistical facts: HBV

- Over 1 million persons are infected with HBV
- The hepatitis B virus can live outside the body for 7 days
- Prior to 1991, an estimated 17,000 health care workers became infected with HBV every year. Since the availability of the hepatitis B vaccine there has been a 95% drop in hepatitis B infection in healthcare workers

Statistical Facts: HCV

- Estimated that over 3 million persons are chronically infected with HCV
- Most are unaware of their disease
- Up to 85% of individuals who are infected with hepatitis C will develop chronic infection
- HCV is the leading indication for liver transplant
- Treatment for HCV is lengthy with significant side effects

Signs and Symptoms of HIV

- Within a few weeks of infection, flu-like symptoms may develop that last for a week or two.
- Some may experience no symptoms at all

Signs and Symptoms of HCV

- Most infected people do not have any signs or symptoms.
- If initial signs and symptoms occur they may include: mild flu-like symptoms, fatigue, fever, nausea or poor appetite, muscle and joint pains, and tenderness in the area of the liver

Signs and symptoms of HBV

- Signs and symptoms include: fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, clay-colored bowel movements, joint pain and jaundice

When should post exposure treatment for HIV begin?

- Treatment should begin within hours of exposure with specific medications if indicated.
- The typical course of treatment is 4 weeks.

What is the post exposure treatment for HCV?

- HCV does not have a post exposure treatment

What is the post exposure treatment for HBV?

- If the worker has not been vaccinated or is not immune against Hepatitis B, post exposure treatment should begin within 24 hours and not more than 7 days past the exposure event.

HBV vaccination

- The hepatitis B vaccine was developed and approved for use in 1986. The Bloodborne Pathogen Standard of 1991 required employers to offer the vaccine at no cost to all employees at risk of exposure to blood or other body fluids
- The immunization must be offered after the new employee has been trained and with within 10 working days of their initial assignment.
- Immunization involves a series of three injection over six months. Titers are obtained 1-2 months after the initial series ends to ensure the employee has developed immunity.
- Employees may provide documentation of all three of the vaccines, proof of immunity, or may sign a declination if they do not wish to receive the vaccine.
- Once vaccinated, most healthcare workers will develop long term protection against the disease. At this time there are no indicators from the CDC for vaccination boosters to provide additional protection

Quiz

- The infection rate in healthcare workers of HBV dropped by what percent after 1991?
- A. 20%
- B. 50%
- C. 75%
- D. 95%

- Answer: D

Quiz

- An employee's RISK of becoming infected after an exposure is increased by:
- A. Not cleaning the affected area after the event
- B. Amount of virus in the patient's blood
- C. Length of exposure
- D. Nothing varies---exposure is exposure

- Answer: B

Quiz

- Most exposures will not result in infection.
- A. True
- B. False

- Answer: A

Exposure Prevention

- Identify standard precautions
- Identify Biohazard warning labels and containers
- Discuss best practices for hand hygiene
  - Soap and water
  - Alcohol hand rubs
- Identify personal protective equipment (PPE) and its appropriate use
- Identify sharps utilized in providing healthcare services and the appropriate use of engineering controls
- Describe work practice controls
- Discuss surface disinfection

Standard Precautions

- Which of the following are included in the definition of standard precautions and should be followed in the workplace:
- A. Always treat all blood and body fluids as infected with a bloodborne pathogen (HIV, HCV, or HBV)
- B. Always utilize the appropriate Personal Protective Equipment (PPE)
- C. Always ensure that all surfaces are decontaminated as outlined in the written cleaning schedule

- Answer: A,B,C

Biohazard labels

- Which of the following require special biohazard labeling and handling:
- A. Sharps container if not red in color
- B. Regulated waste
- C. Containers used to store, transport, or ship blood
- D. On the outside of specimen containers
- E. Food waste
- F. Regular trash from an exam room

- Answer: A,B,C,D

Hand hygiene: soap and water

- 1. Plain soap or anti-microbial soap and water
- 2. Prepare paper towels if needed
- 3. Turn water on
- 4. Lather hands with soap
- 5. Wash hands for at least 15 seconds
- 6. Completely rinse hands of soap
- 7. Dry hands thoroughly with paper towels
- 8. Use paper towels to shut the water off
- 9. Use paper towels to open doors as needed

Hand hygiene: hand sanitizer

- Alcohol hand sanitizer may be used when the hands are not visibly soiled or contaminated.
- Hand sanitizer must contain 60-95% alcohol content.
- To be effective, the sanitizer must be rubbed on all surfaces of the hands for at least 15 seconds or until completely dry

Hand Hygiene: how to use hand sanitizer

- Alcohol based hand sanitizer
- Choose a product which has 60-95% alcohol content
- Apply amount of product as recommended by the manufacturer
- Rub the product covering all surfaces of the hands until the hands are completely dry

Personal Protective Equipment (PPE)

- Employers are required to provide, free of charge, to all employees protective equipment as needed based on the specific task.
- PPE includes:
  - Masks
  - Utility gloves
  - Goggles
  - Gloves (latex and non)
  - Gowns
  - Lab coats (can be considered PPE)
- All reusable PPE is to be laundered and maintained by the employer at no cost to the employee. However; personal scrubs or uniforms are not considered PPE and thus not the responsibility of the employer to launder or maintain.

Personal Protective Equipment

- Which of the following personal protective equipment (PPE) items would be needed when washing contaminated instruments?
- A. Scrubs
- B. Rubber boots
- C. Mask
- D. Heavy duty utility gloves
- E. Goggles or face shield
- F. Protective gown if there is the potential for splash or splatter of contaminated solutions

- **Answer: D,E,F**

Quiz

- Pat just finished assisting the doctor with a procedure. She walked the patient to the receptionist desk for check out without removing her own PPE which included gloves, mask, and a gown. Pat untied the mask and left everything else on. After the patient was discharged, she threw the gloves in the receptionists trash bin. Did Pat follow the correct process for disposal of PPE?
- A. Yes
- B. No

- Answer: B

Quiz

- Gloves, either latex or other, are required for every patient contact, if there is potential exposure to blood or body fluids.
- A. True
- B. False

- Answer: A

Quiz

- When preparing to eat or drink or after going to the restroom, which hand hygiene procedure would be recommended?
- A. Soap and water
- B. Hand Sanitizer
- C. None

- Answer: A

Quiz

- The appropriate use of PPE is just a suggestion, but is not required by law.
- A. True
- B. False

- Answer: B

Sharps

- Explorers
- Scalers
- Needles

Safety Controls

- Isolate or remove the exposure hazard from the workplace; reducing the likelihood of exposure to blood or body fluids.

Contaminated Sharps

- Following a procedure, a healthcare worker is carrying an uncovered tray of contaminated reusable sharps to the decontamination area for cleaning. What is the proper procedure to transport contaminated reusable sharps to reduce the likelihood of a sharps exposure?
- A. Reach down and immediately pick up and fallen pieces before someone steps on them and is cut.
- B. Use tools, such as a broom and dustpan to collect any dropped pieces.
- C. contaminated sharp items must be transported in a closable, leak proof, labeled container. If the container is dropped and opens, don heavy duty utility gloves to pick up the sharp items and place them in the transport container. Then proceed to the decontamination area of the practice

- Answer: C

Contaminated Sharps

- An employee is beginning to wash contaminated instruments from a procedure earlier in the day. The instruments are soaking in a basin in the sink. The incorrect procedure is to:
- A. Reach into the soapy water and feel around for the instruments to wash.
- B. Use a strainer type basket to hold the contaminated items.
- C. Use forceps to reach into the water for the instruments

- Answer: A

Contaminated Sharps

- Always use safety measures to protect against worker exposure to contaminated sharps.
  - Utilize safety devices when possible
  - Activate the safety mechanism on the safety device in use
  - Always wear heavy duty utility gloves when washing contaminated sharps
  - Transport contaminated sharps in a closed container
  - Place contaminated used sharps in an appropriately labeled sharps container as soon as possible after use

Sharps Safety Program

- Identification of safety devices which may be utilized in the delivery of patient care.
- Identification of training opportunities such as the appropriate activation of sharps safety features of safety devices
- Identification of the need for engineering controls for additional protections against sharps injuries, such as the use of safety scalpels when performing procedures

Disinfecting procedure

- Places that require disinfecting:
  - Faucets
  - Door handles
  - Beds
  - Chairs
  - Tables
  - Cabinets
  - Sinks
  - Counters lights
  - armrests

Environmental surface cleaning and disinfection

- The Bloodborne Pathogen rule requires each facility to have a written cleaning schedule outlining when surfaces are to be cleaned and disinfected based on the task(s) performed in the specific area
- Employees should be sure to read the directions on the label of the EPA approved hospital level disinfectant being used. Surfaces must remain wet for the recommended time in order for the surface to be adequately disinfected.
- All horizontal surfaces should be included in the cleaning/disinfection process being sure to remember the door handles and light switches

Environmental surface cleaning and disinfection

- If a procedure has been performed which involves splash or splatter of blood or body fluids the surface must be cleaned prior to disinfection. This is commonly called the two step method or spray-wipe-spray.
- Don't forget to use appropriate PPE such as gloves and face mask, if using a spray cleaner/disinfectant, when cleaning a room

Quiz

- Disinfecting a room requires:
- A. Wearing PPE as indicated by the product in use
- B. Using correct cleaning products as directed
- C. Wiping down all horizontal surfaces
- D. Wiping down commonly touched areas; such as light switches and door knobs

- **Answer: A,B,C,D**

Quiz

- Even though the safety mechanism is activated on a needle attached to a syringe, the device must be disposed of in a sharps container located in close proximity to the area of use.
- A. True
- B. False

- Answer: A

Quiz

- All horizontal surfaces in patient care areas should be cleaned and disinfected after procedures involving splash and splatter of blood or other body fluids.
- A. True
- B. False

- Answer: A

Exposure

- Describe how exposures occur
- Explain the steps to follow once an exposure has occurred
- Identify the post exposure process

Exposure events

- Which of the following may lead to an exposure to blood or body fluids:
- A. Needle stick with contaminated needle
- B. Cut from contaminated sharps (scalpel, scalers, etc.)
- C. Splash or splatter to mucous membranes (of the eyes, nose, mouth)
- D. Splash to non-intact skin
- E. Cleaning a contaminated area with gloves
- F. Needle stick during preparation for injection

- Answer: A,B,C,D

Exposure treatment

- Advance planning and training can ensure care is provided to both the source patient and practice employee in a timely and efficient manner
- Source Patient
- Exposed Healthcare Worker
- Unknown Source Exposure

Source patient

- Source patient testing for HIV, HBV, and HCV should be performed. Obtain patient consent based on state law.
- A rapid HIV test should be obtained on the source patient. If indicated, the exposed worker should begin post exposure medication within hours of the exposure event.
- Forward the results of the source patient tests *to the physician providing treatment to the exposed employee*. Additionally, forward the results to any physician as requested by the source patient.
- The cost of all source patient testing is the responsibility of the practice.

Exposed Healthcare Worker

- The employee should immediately wash the exposed area with soap and water or flush the mucous membranes with copious amounts of water
- Once the employee has washed or flushed the area, the event should be reported.
- Employer will offer testing and counseling as required by law
  - The employee should sign a consent form to authorize post exposure care which includes testing, counseling and possible treatment
  - If the exposed employee declines HIV testing, provide the option to draw and hold the blood sample for 90 days. The employee may decide at a later date to have the testing performed

Exposed Healthcare Worker cont.

- If the employee declines the post exposure testing and a care of declination should be signed.
- The exposed employee must be provided the source patient test results

- The treating physician of the employee should be provided the following information:
  - Source patient's test results
  - A copy of the employee's hepatitis B vaccination status
  - Documentation of the exposure incident: route of exposure, circumstances of the event, and the employee's duties
  - A copy of the OSHA Bloodborne Pathogen Standard

Unknown Source Worker

- All of the same standards apply to the care provided for the exposed worker as with any other known source exposure
- The following tests should be obtained, after obtaining consent from the exposed worker, initially and for up to a six month period of time
  - HIV Antibody
  - Hepatitis B Surface Antigen (HBsAG)
  - Anti-Hepatitis C Virus (Anti-HCV)
- For the unknown source scenario, a determination of risk of potential transfer of disease based on patient population and type of exposure should be made to determine need for post exposure prophylaxis for HIV which should begin within hours of the exposure event

Post Exposure Checklist

- 1. Clean the area with soap and water
- 2. Flush mucous membranes with water
- 3. Report immediately
- 4. Source patient testing: Rapid HIV, HBV and HCV
- 5. Offer baseline testing and counseling for employee
- 6. Post exposure testing will be provided at 6 weeks, 12 weeks, 6 months. Testing is performed on this schedule if the worker has been exposed to HBV, HBC, or HIV or if the source is unknown.

Confidentiality

- As a general rule, the safety officer, Employee Health and/or the treating healthcare provider are the only individuals who have access to the confidential medical information stored in the employees' medical file.
- Additionally, in many situations Worker Compensation claims are filed, the exposed employee should understand that the employer may become aware of certain details as it relates to handling of the Worker's Compensation claim.

Quiz

- The first step in the post exposure process is:
- A. Inform the person your facility has designated to handle exposure incidents
- B. Wash the area with soap and water or flush the mucous membranes
- C. Seek medical testing

- Answer: B

Quiz

- It is required by law that an exposed HCW be tested for potential infectious diseases.
- A. True
- B. False

- Answer: B

Quiz

- It is required by law in most states that the source patient be tested for bloodborne illnesses (HIV, HCV, HBV) and for those test results to be provided to the exposed worker.
- A. True
- B. False

- Answer: A

Respiratory Illness

- Describe respiratory hygiene and cough etiquette
- Explain safety measures facilities should take to reduce the likelihood of exposure to a patient with active TB

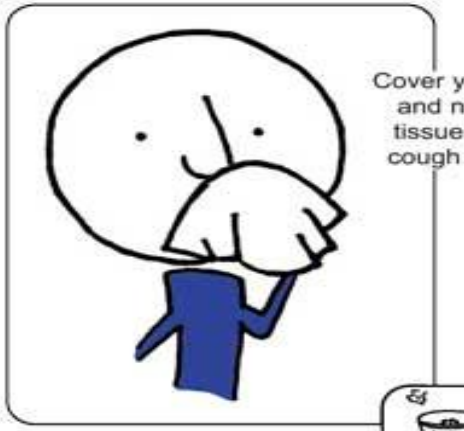
Cover your Cough

- Respiratory Hygiene and Cough Etiquette will help reduce the spread of respiratory illnesses. Staff members, visitors, and patients will benefit from the following protection measures:
  - Cover the mouth and nose with a tissue when coughing or sneezing
  - Dispose of the used tissue immediately in a waste receptacle
  - Perform hand hygiene with either soap and water or alcohol-based hand rub
  - Even if you haven't sneezed or coughed, but those around you have, it is always best to perform hand hygiene after touching contaminated objects/materials

Patients with signs and symptoms of a respiratory illness, especially if they are coughing, should be offered a mask when they enter the facility.

Stop the spread of germs that make you and others sick!

Cover your Cough



Cover your mouth and nose with a tissue when you cough or sneeze

or

cough or sneeze into your upper sleeve, not your hands.

Put your used tissue in the waste basket.

You may be asked to put on a surgical mask to protect others.

Clean your Hands

after coughing or sneezing.

Wash hands with soap and warm water for 20 seconds *or*

clean with alcohol-based hand cleaner.

CDC

MDH

APIC

Screening for TB

- **Signs and symptoms:** fever, night sweats, weight loss, and productive cough
- **Prevention:** provide the patient with a mask and remove from the general waiting room
- **Patient process:** If receiving care in an out-patient facility which does not routinely treat patients with active TB and if the patient is not acutely ill, the patient should be discharged from the site as quickly as possible. Instructions for appropriate follow-up care which is usually provided at the local health department should be provided.
- **Post Exposure:** If it is found the patient has active TB, exposed workers will need a tuberculin skin test
  - The infected patient should not receive further care in outpatient settings unless adequate protections are in place or the patient is no longer contagious

Cold and ‘Flu’ Season

- What should every facility do during cold and flu season to help prevent the spread of respiratory illness?
- A. Post cough etiquette signs in the waiting areas
- B. Provide tissues and waste receptacles for tissue disposal
- C. Provide hand sanitizer in the waiting rooms

- Answer: A,B,C

Cold and Flu Season

- Ensure cough etiquette signs are posted
- Provide masks for patients and visitors as they enter the facility
- Patients and visitors with respiratory symptoms should don a mask
- Provide hand hygiene products in waiting area
- Provide tissues in waiting area to control secretions
- Provide waste receptacles in waiting areas
- For outpatient facilities during influenza season, screen for ‘flu’-like symptoms when taking appointments and reminder calls and consider rebooking the appointment if appropriate

Quiz

- A patient or visitor should be offered a mask when they enter the facility if they exhibit signs of a respiratory illness including a cough.
- A. True
- B. False

- Answer: A

Quiz

- Cough etiquette states you should sneeze or cough into a tissue or your sleeve if necessary.
- A. True
- B. False

- Answer: A

Quiz

- The following are signs and symptoms of active TB: fever, night sweats, weight loss, and productive cough.

- A. True
- B. False

- Answer: A

Hazard Communication Standard

- Discuss classification of chemicals
- Describe and locate the four key elements on a label
- Identify GHS pictograms
- Recognize each section of a Safety Data Sheet which outlines essential safety measures for workers
- Recognize the characteristics of hazardous drugs

Employees Right-to-Know

- Employees have the right to be aware of the hazards and identities of the chemicals to which they are exposed when working.
- Employers must provide:
  - Hazard Communication Plan
  - Maintain an inventory of hazardous elements, chemical compounds or mixture of elements/compounds
  - Material Safety Data Sheets/Safety Data Sheets (MSDS/SDS)
  - Secondary container labels
  - Appropriate PPE based on the chemical in use
  - Employee training

GHS Compliant Classification and Labeling

- GHS is a collection of best practices by the United Nations. On March 26, 2012 OSHA published regulations that modified the Hazard Communication Standard to reflect these best practices.
- The best practices ensure communication of hazards will be consistent worldwide on Classification, Labeling, and Safety Data Sheets.

Classification

- Relevant data regarding the HAZARDS and risks associated with the use and exposure of a chemical. This will also include the degree of hazard where appropriate.

Labeling

- The medium by which hazards are identified on a product. Includes pictograms, signal words, and hazard statements.

Safety Data Sheets (SDS)

- Previously referred to as Material Safety Data Sheets, SDS will provide documentation on procedures for handling or working with a substance in a safe manner.

Chemical Classification

- Manufacturers will begin the process of chemical classification by comparing chemicals against a list of criteria to determine the hazard of the chemicals
- Chemicals can cause or contribute to chronic health problems, such as heart or kidney disease or cancer. Others chemicals cause acute injuries or illnesses such as dermatitis, burns, and poisonings. Some chemicals pose hazards by contributing to fires and explosions.

Health Hazard

- A Health Hazard may pose one of the following hazardous effects to the individual:
  - Acute toxicity (any route of exposure)
  - Skin corrosion or irritation
  - Serious eye damage or eye irritation
  - Respiratory or skin sensitization
  - Germ cell mutagenicity
  - Carcinogenicity
  - Reproductive toxicity
  - Specific target organ toxicity (single or repeated exposure)
  - Aspiration hazard

Physical Hazards

- A Physical Hazard may pose one of the following hazardous effects:
  - Explosive
  - Flammable (gases, aerosols, liquids, or solids)
  - Oxidizer (liquid, solid, or gas)
  - Self-reactive; pyrophoric (liquid or solid)
  - Self-heating
  - Organic peroxide
  - Corrosive to metal
  - Gas under pressure
  - In contact with water emits flammable gas

Manufacturers Labels

- All manufacturer's labels must include the outline elements on every chemical produced. All labeling must reflect the changes required by GHS by June 2015.
- 1. Hazard statements-description of the nature and if indicated the degree of the hazard
- 2. Hazard pictograms-black symbol on a white background with red diamond border
- 3. Product identifier-(INGREDIENTS) How the chemical is identified which includes the name of the product
- 4. Precautionary Statements-recommended measures that should be taken to minimize or prevent adverse effects from exposure or from improper storage or handling
- 5. Supplier contact information-company name, address, phone number

Key Label Elements

- Key label elements provide a quick review of the chemical hazards and the protections needed for the worker.
- Symbols (hazard pictograms)-Convey health, physical and environmental hazard information, assigned to a GHS hazard class and category.
- Signal Words- "Danger" or "Warning" is used to emphasize hazards and indicate the relative level of severity of the hazard.
  - Only one signal word corresponding to the class of the most severe hazard should be used on a label
  - "Danger" is used for the more severe hazards
  - "Warning" is used for less severe hazards

Key Label Elements cont.

- Hazard Statements-standard phrases assigned to a hazard class and category that describe the nature of the hazard
- Precautionary Statements-a phrase that describes recommended measures to be taken to minimize or prevent adverse effects from exposure, improper handling or storage.
  - May include first aid measures

Understanding Pictograms

- A pictogram is a symbol and includes other elements such as: a border, background or pattern, or color used to relate specific chemical hazard information.

Health Hazard

- **Carcinogen**-A substance or a mixture of substances which induce cancer or increase its incidence
- **Mutagenicity**-May cause genetic defects
- **Reproductive Toxicity**-Includes adverse effects on sexual function and fertility in adult males and females, as well as adverse effects on development of the offspring
- **Respiratory Sensitizer-**a chemical that will lead to hypersensitivity of the airways following inhalation of the chemical
- **Target Organ Toxicity-**may cause non-lethal damage to specific organs arising from a single exposure or repeated exposures to a chemical. All significant health effects to an individual organ that can impair function, reversible and irreversible, immediate and/or delayed
- **Aspiration toxicity**-includes severe acute effects such as chemical pneumonia, varying degrees of pulmonary injury or death following aspiration

Skull and Crossbones

- Acute toxicity: these substances can cause severe, even fatal events after single or multiple ingestions or absorption through skin within a 24 hour period, and/or inhalation exposure of 4 hours. These materials are the most toxic.

Exclamation Mark

- **Irritant (skin and eye):** eye irritation is the production of changes in the eye which are fully reversible
  - Skin irritation is the production of reversible damage to the skin.
- **Skin sensitizer:** a chemical that will lead to an allergic response following skin contact
- **Acute toxicity:** refers to those reversible adverse effects occurring following oral or dermal administration of a single or multiple dose of a substance, or multiple doses given within 24 hours, or an inhalation exposure of 4 hours.
- **Narcotic effects:** Central nervous system depression including narcotic effects such as drowsiness, narcosis, reduced alertness, loss of reflexes, lack or coordination, and vertigo. These effects can also be manifested as severe headache or nausea, and can lead to reduced judgment, dizziness, irritability, fatigue, impaired memory function, deficits in perception and coordination, reaction time, or sleepiness
- **Respiratory tract irritant:** may result in an inflammatory response or respiratory tract irritation

Flame

- **Flammable liquids and gases:** materials that can easily catch on fire if exposed to a high temperature
- **Flammable solid:** a solid which is readily combustible or which may cause or contribute to fire through friction, or an ignition source such as a burning match
- **Pyrophoric solid:** small quantities of these solids are liable to catch on fire within five minutes after coming into contact with air.
- **Self-heating chemical:** large quantities or long exposure times of this chemical solid or liquid may react with air or water to catch on fire or give off flammable gases
- **Self-reactive chemicals:** unstable liquid or a solid chemical that can explode, burn rapidly, is sensitive to impact, and can react dangerously on its own
- **Organic peroxide:** a liquid or solid organic chemical which is considered a derivative of hydrogen peroxide, and has self-reactive properties

Corrosion

- Skin corrosion/Burns: The production of irreversible damage to the skin
- Serious eye damage: the production of tissue damage in the eye, or serious physical decay of vision.
- Corrosive to metals: a chemical which by chemical action will materially damage, or even destroy metals

Exploding Bomb

- An explosive chemical: solid or liquid chemical which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings.
- Self-reactives: material that is thermally unstable

Gas Cylinder

- **Gases under pressure:** compressed gases, liquefied gases, dissolved gases and refrigerated liquefied gases that are 200kPa (29psi) (gauge) or more and could become a projectile if the container is damaged.

Flame over Circle

- Oxidizing liquids and solids: a liquid or solid which, while in itself not necessarily combustible, may contribute to the combustion of other material by increasing the concentration of oxygen in the air. Unlike the other fire pictogram, this one needs a catalyst to create the hazard.

Label example

- Signal word
- Hazard statement
- Precautionary statement

Pictograms to recognize physical hazards

- A. compressed gases
- B. explosives
- C. flammable liquids
- D. corrosive to metals

- Answer: B

Pictograms to recognize physical hazards

- A. flammable liquids
- B. explosives
- C. acute toxicity
- D. Skin corrosion

- **Answer: A**

Pictograms to recognize physical hazards

- A. skin irritation
- B. corrosive to metals
- C. compressed gases
- D. oxidizing liquids

- Answer: D

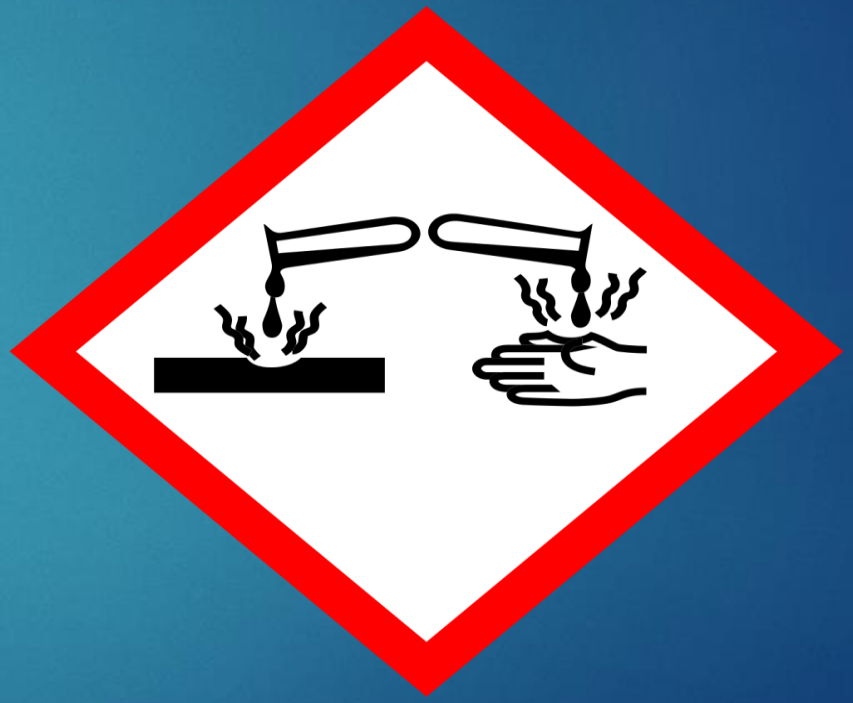
Pictograms to recognize physical hazards

- A. compressed gases
- B. corrosive to metals
- C. skin corrosion
- D. flammable liquids

- Answer: A

Pictograms to recognize physical hazards

- A. explosives
- B. flammable liquids
- C. corrosive to metals
- D. acute toxicity



- Answer: C

Pictograms to recognize physical hazards

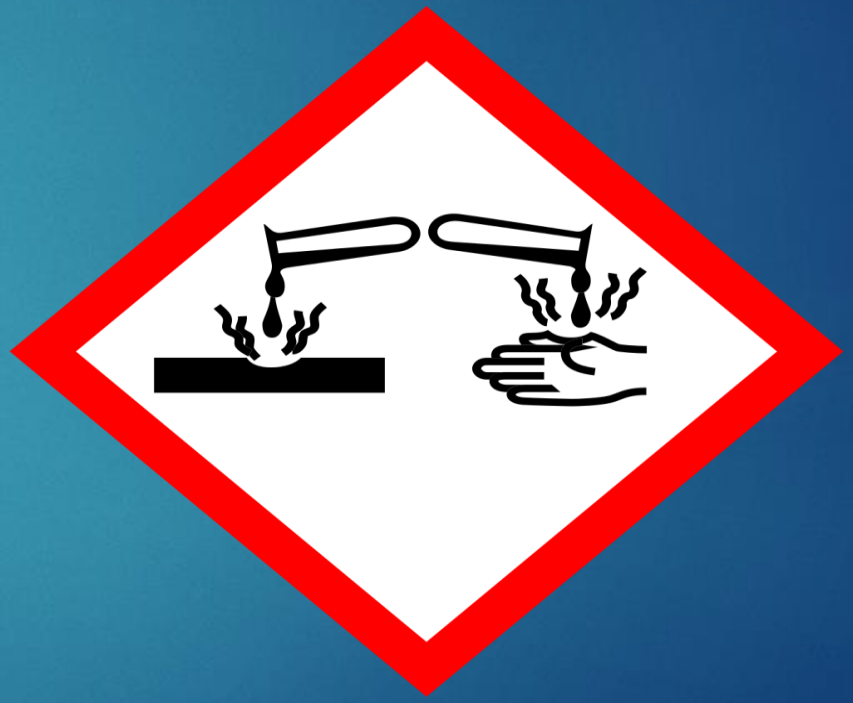
- A. acute toxicity, possibly fatal
- B. skin corrosion
- C. corrosive to metals
- D. skin irritation

- Answer: A

Pictograms to recognize physical hazards

- A. oxidizing liquids
- B. aspiration hazard
- C. skin corrosion
- D. compressed gases

- Answer: C



Pictograms to recognize physical hazards

- A. flammable liquids
- B. skin irritation
- C. compressed gases
- D. oxidizing liquids

- Answer: B

Pictograms to recognize physical hazards

- A. acute toxicity, possibly fatal
- B. hazardous to the aquatic environment
- C. skin corrosion
- D. health hazard

- Answer: D

MSDS and SDS

- To supplement the information on the labels, Material Safety Data Sheets (MSDS) will be updated and referred to as Safety Data Sheets (SDS).
- SDSs will be in a standard 16 section format. Sections 2, 4, 6, and 8 will provide important information on how to handle hazardous chemicals and what protections workers must have in order to handle these chemicals.
- It is important that you compare these sections on the SDS with the current MSDS on file to communicate any applicable changes to affected employees.

Identification

- Includes:
  - Product identifier
  - Manufacturer or distributor name, address, phone number
  - Emergency phone number
  - Recommended use
  - Restrictions on use

Hazard(s) Identification

- Includes:
  - All hazards regarding the chemical
  - Required label elements including pictograms

Composition/information on ingredients

- Includes:
  - Information on chemical ingredients
  - Trade secret claims

4-First-aid measures

- Includes:
  - Important symptoms/effects, acute and delayed
  - Required treatment after exposure

5-Fire-fighting measures

- Includes:
  - Suitable extinguishing techniques, and equipment
  - Chemical hazards with fire

6-Accidental release measures

- Includes:
  - Emergency procedures
  - Proper methods of containment and spill cleanup

7-Handling and Storage

- Includes:
  - Precautions for safe handling and storage, including incompatibilities

8-Exposure

- Includes:
  - How long the employee can safely be exposed to the chemical.
  - Safe amount of chemical in the air
  - Appropriate engineering controls to reduce the risk
  - Personal protective equipment (PPE)

9-Physical and chemical properties

- The chemical's characteristics

10-Stability and Reactivity

- Includes:
  - Chemical stability and possibility of hazardous reactions

11-toxicological information

- Includes:
  - Routes of exposure
  - Related symptoms, acute and chronic effects
  - Numerical measures of toxicity

Sections 12-15

- These are not enforced by OSHA
- 12. ecological information
- 13. disposal considerations
- 14. transportation information
- 15. regulatory information

16-Other information

- Includes:
  - Date of preparation or last revision

MSDS/SDS Highlights

- Do you know where your MSDS/SDS are kept?
  - It is important to compare each new SDS to the existing MSDS as chemical manufacturers classify chemicals and provide update information
- Sections on the SDS which may impact you the most are:
  - Section 2: Hazard identification
  - Section 4: First-aid measures
  - Section 6: Accidental release measures
  - Section 8: Exposure controls/PPE

MSDS/SDS Highlights

- Any change in physical or health hazards may drive a change of process in protection for the affected employee and needs to be communicated.
  - SDS's need to be accessible at all times to employees
  - Employees should review SDS's for products they are working with
  - If utilizing a fax on demand or internet service, all employees must understand how to access the information
  - A complete list of all hazardous substances should be kept and updated on a yearly basis

Clues to exposure

- Odor
  - If you smell a chemical you are inhaling it. The key is knowing how much you can inhale before the chemical becomes harmful. There are some harmful chemicals which do not have an odor
- Taste
  - Inhalation or swallowing may leave a particular taste in the mouth based on the chemical.
- Particles
  - Expelling visible particles after blowing the nose or coughing is an indication that particles have been inhaled into the lungs. Most inhaled particles are too small to be seen.
- Dust
  - If you can see the dust or mist which has settled on surrounding surfaces there is a chance the chemical has been inhaled
- Immediate symptoms
  - Sudden onset of symptoms may indicate overexposure. Symptoms may include: burning sensation of the nose, throat or skin, tearing of the eyes, respiratory symptoms, or dizziness.

Hazardous drugs

- Hazardous chemicals may not be the only dangerous substances in an office. Many healthcare settings may also have hazardous drugs.
- In order for a drug to be considered hazardous the drug must have one or more of the following characteristics:
  - Genotoxicity (causes damage to DNA and may cause cancer)
  - Carcinogenicity (causes cancer)
  - Teratogenicity (may impact fertility or cause fetus malformation)
  - Reproductive toxicity
  - Serious organ or other toxic manifestation observed at low doses
- If hazardous drugs are being administered, there must be a written plan in place to protect employees from health hazards associated with hazardous drugs and to keep exposure to the drugs as low as reasonably achievable.

Eye Wash Stations

- Ensure there is a clear path to the eye wash station
- Yell for help if needed
- Activate the unit (foot or hand) which should provide flush until intentionally turned off
- Keep eye lids open with hands
- Flush eyes for at least 15 minutes of continuous tepid water flow
- Seek additional medical care as directed on MDS

Eye Wash Stations

- Eye wash stations should be clearly identified with highly visible signage.
- When using corrosive chemicals, there must be direct access (cannot go through a door or turn a corner) to a plumbed eyewash station.
- Squeeze bottle may be used in conjunction with an eyewash until the worker can get to a plumbed unit, but may not be used alone when corrosive chemicals are in use.
- Plumbed units, but may not be used alone when corrosive chemicals are in use. Plumbed units should be activated weekly to flush the line and test for proper operation

Quiz

- The length of time to flush eyes in case of a splash exposure is:
- A. 5 minutes
- B. 10 minutes
- C. 15 minutes
- D. 20 minutes

- Answer: C

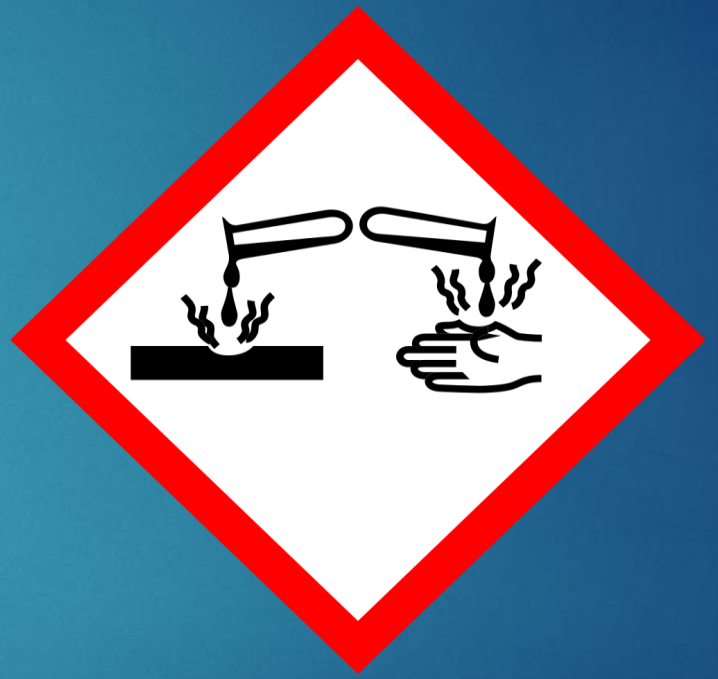
Quiz

- Hazardous drugs not in pill form, the same as hazardous chemicals, require MSDS/SDS and employee orientation.
- A. True
- B. False

- Answer: A

This label represents what chemical risk?

- A. Flammable
- B. Corrosive
- C. Explosive
- D. Poison
- E. Health Hazard



Answer: B

Other Safety Matters

- Describe best practices for fire response
- Identify potential workplace violence safety tips
- Define ergonomics

Fire response

- If a fire starts, it is the healthcare worker's responsibility to put the fire out.
- A. True
- B. False
- **Answer: B**
- It is the responsibility of the worker to follow the fire plan and procedure which includes calling 911 or the designated emergency number and evacuating patients. Only if the worker has received hands on instruction on use of a fire extinguisher and it is incorporated in the fire plan should a worker put a fire out with an extinguisher.

Fire emergency action plan

- Every workplace is required to have a fire emergency plan, which must be in writing if 10 or more workers are employed.
- The plan should clearly outline any major fire hazards, proper storage and handling of hazardous materials which may ignite a fire, specific employee responsibilities, and established meeting location outside the practice for employees
- Employees should clearly understand what tasks they are to perform in case of an emergency. Assignments may include: escorting patients from the building, shutting off all fans, heaters, unnecessary equipment, and verifying all areas of the practice have been evacuated.
  - If the use of a fire extinguisher is an assigned duty, hands on training (and documentation) of extinguisher use is required at initial assignment and on an annual basis

Fire emergency action plan

- Have emergency numbers, either 911 or designated number posted on every phone
- Employees/patients must be notified on the emergency. This can be through voice, overhead page system, or fire alarm
- Predetermined code for fire-Do not yell fire as it will cause panic

Fire Emergency

- It is the responsibility of the responding fire and rescue department to administer any rescue and medical duties. If a fire occurs, these steps must be followed to ensure the safety of every employee and patient.
  - Call 911 or a designated emergency number
  - Activate the fire pull alarm or alarm system if applicable.
  - Notify all employees and patients with voice, alarm or other to evacuate the building
  - Employees perform assigned fire responsibilities
  - Close all doors and windows as building is evacuated, turn off lights
  - Once evacuated, no one is allowed to return to the building until the all clear has been issued by emergency personnel
  - Account for every employee and patient at the designated safety area

Workplace Violence

- There are currently no specific OSHA standards on workplace violence. However under **OSHA General Duty Clause**, employers are required to provide a place of employment that is free from recognizable hazards that cause or are likely to cause death or serious harm. Therefore failure to protect employees from recognized workplace violence may be considered a violation of OSHA standards and could result in a citation. Employers should strive to identify and protect employees from potential violence.

Identifying Potential Violence

- Violence to employees may occur from many sources.
- Work conditions
  - Exchange of money or large amounts of cash kept on site
  - Working in a high crime area
  - Working in a mobile workplace
  - Controlled substances kept on-site
  - Early morning and late night work hours
- Other conditions
  - Domestic disputes which occur in the workplace
  - Disgruntled employee, current or previous
  - Patients or their family members

Avoiding Workplace Violence

- Violence, in many cases may be avoided with planning and awareness. Watching for warning signs may help prevent an assault.
- Warning signs:
  - Verbal, written, or unwarranted threats
  - Fear among coworkers
  - Violence toward inanimate objects
  - Behavior or performance problems
  - New or increased stress at home or work
  - Substance abuse
  - Stealing
  - Expression of a plan to hurt others

Prevention

- Each facility should adopt a ZERO tolerance workplace violence policy. All staff should be educated on workplace violence and the warning signs, prevention measures, as well as the zero tolerance policy. Employees should be encouraged to report any incidents or concerns to the Compliance Officer. Reassure employees that reporting incidents will not result in any adverse action against them.
- Inappropriate behavior will not be tolerated:
  - Obscene language, name calling, or abusive behavior
  - Intimidation through direct or indirect verbal threats or gestures
  - Physical abuse
- Other practical prevention measures include:
  - Escorts to cars or transportation in unsafe areas or if irregular work hours
  - Reduction of cash on premise
  - Awareness of employee domestic abuse
  - Limited amount of controlled substances stored on site

Establish a Plan in the Event of Suspected or Real Violence

- Remain calm, move and speak slowly, quietly, and confidently
- Be a good listener, encourage the person to talk
- Remain relaxed, but attentive. Stand at a right angle to the person, not directly in front of them
- Acknowledge the person's feelings
- Ask for a small favor, such as moving to a different area, sitting down, etc.
- Be reassuring and offer choices; break big problems into smaller ones
- Use delaying techniques; such as offering a drink of water to allow calming time
- Accept criticism positively, ask for clarification if needed
- Arrange seating so you have an escape route
- Use neutral words, tone, and body language
- Notify another person with a code or signal that there is an issue

Ergonomics

- Ergonomics is the science of fitting workplace conditions and job demands to the capabilities of the working population. The goal is to reduce the number and severity of work-related musculoskeletal disorders.

Ergonomics-injuries

- Ergonomic injuries are musculoskeletal in nature.
- Many injuries result from improper lifting techniques, poor computer posture, and repetitive hand motions utilized while performing patient procedures.

Ergonomic Tools

- The use of proper equipment and appropriately designed work spaces reduce the likelihood of musculoskeletal disorders.
- Healthcare workers can work more effectively and efficiently when appropriate adjustments are made to equipment, their work environment or even personal posture.

Lifting Guidelines

- Healthcare workers need to move and lift a variety of items, including patients. By using proper lifting techniques, back injuries will be less likely to occur.
  - Do not move an item or patient while off balance.
  - Always carry the load as close to your center of body as possible
  - Do not carry a patient alone, especially injured patients.
  - Always stack heavy items on lower shelves

Slip and Spills

- Preventing slips and falls is common sense practice. Every facility should maintain a safe environment for workers as well as patients
- Wet floors should always have signs indicating the condition
- All fire and emergency exits must be kept clear for ease of passage in case of the need for an emergency exit
- Extension cords or long appliance cords should be located in such a manner that they are not in areas where people are walking as this presents a trip/fall hazard
- Wet floors a slip hazard. Wet surfaces may contribute to the growth of mold, fungi, and bacteria.
- All work areas should be kept organized and orderly

Quiz

- When cleaning a floor, wet floor signs are not necessary.
- A. True
- B. False

- Answer: B

Quiz

- Lifting heavy items should always be done from a squatting position, as opposed to bending from the waist.
- A. True
- B. False

- Answer: A

Quiz

- If a fire is suspected or detected, employees should call 911 or an identified emergency number and evacuate patients.
- A. True
- B. False

- Answer: A

END!!!