

BLOODBORNE PATHOGENS IN HEALTHCARE ENVIRONMENTS

COURSE OUTLINE

- **There are several types of bloodborne pathogens that you should be aware of.**
 - The human immunodeficiency virus (HIV), is one of the most well-known diseases you can contract from blood.
- **HIV slowly breaks down the body's immune system.**
 - This makes it much harder to fight off infections and illnesses.
- **The onset of HIV can be accompanied by a number of symptoms, including...**
 - Weakness.
 - Fever.
 - Sore throat.
 - Nausea.
 - Headaches.
 - Diarrhea.
 - Other "flu-like" feelings.
- **But many people with HIV show no apparent symptoms for years after their initial infection.**
- **There is still no proven vaccine for HIV, and no known cure.**
 - But there are other preventative measures and treatments available.
 - For instance, pre-exposure prophylaxis (PrEP) is an FDA-approved treatment that helps prevent HIV transmission.
- **There are also options for anyone who does contract HIV.**
 - Antiretroviral therapy (ART) can help most patients' viral load drop to an undetectable level within 6 months.
 - That means that as long as the patient continues to take their medication as prescribed, the virus will not progress and cannot be transmitted to another person.

- **Without treatment, people who contract HIV risk developing Acquired Immunodeficiency Syndrome ("AIDS").**
 - This is an advanced stage of the virus where the immune system is severely weakened.
 - It can ultimately be fatal. So controlling the HIV pathogen is very important.
- **Another bloodborne pathogen you should know about is hepatitis.**
 - It usually results in an inflammation of the liver.
 - It also frequently progresses to more serious conditions, including cirrhosis and cancer.
- **Hepatitis B and C are the most common bloodborne diseases in the country.**
 - Hepatitis B transmits through infected blood and bodily fluids, while you can only contract hepatitis C through blood-to-blood contact.
- **While there is no known cure for hepatitis B, a vaccine is available that can prevent infection.**
 - In some cases, the same vaccine can also be effective in preventing infection after exposure.
- **There are also treatments that can help to control hepatitis B and relieve its symptoms.**
 - These approaches can range from antiviral medications to liver transplants, depending on how serious the infection has become.
- **In recent years there has been even more progress made in the treatment of hepatitis C.**
 - Today there are drugs that can actually cure hepatitis C in 95% of the population within 8-12 weeks.
- **But how can someone tell if they have been infected?**
 - Hepatitis B symptoms can take six weeks to six months to develop.
 - Hepatitis C takes from four weeks to three months to appear.
- **The initial indications resemble those of a mild case of the "flu".**
 - There is a sense of fatigue, nausea, loss of appetite, and possible stomach pain.
 - Often, jaundice (a distinct yellowing of the skin) will eventually develop, as well as a darkening of the urine.

- **In healthcare environments, bloodborne pathogens are most often transmitted "parenterally".**
 - This is when microorganisms that are present in a substance are accidentally "injected" into a worker by a contaminated sharp object.
- **These exposures typically occur through punctures from infected needles, or human bites.**
 - They are so common that preventing "parenteral" exposures is one of the major focuses of the OSHA Bloodborne Pathogens Standard.
- **Bloodborne pathogens can also be transmitted through skin abrasions or cuts that come into contact with potentially infectious materials, such as...**
 - Blood.
 - Human tissue.
 - Vaginal secretions from discarded hygiene products.
 - Other body substances with blood in them.
- **Cultures and bodily substances that are visibly contaminated with blood must also be considered potentially infectious.**
 - This is also true for any bodily fluids and materials of unknown origin.
 - Materials taken from infected lab substances may carry bloodborne pathogens as well.
- **The Bloodborne Pathogens Standard requires your facility to do a number of things to protect you and your coworkers from bloodborne diseases.**
 - The first involves creating an "Exposure Control Plan".
- **This Plan spells out how your workplace will address the requirements of the Standard, including...**
 - Determining each employee's potential for exposure to Bloodborne Pathogens.
 - Examining ways to limit or eliminate these exposures.
 - Setting up a hepatitis B vaccination program.
 - Post-exposure protocols.
- **Other parts of the plan address:**
 - Warning signs and labels.
 - Employee training.
 - Keeping records regarding exposure, vaccination and training.

- **The Plan must also incorporate the use of "Standard Precautions".**
 - This requires that all human blood and other body substances be treated as if they are known to be infectious.
- **One of the most critical issues in an Exposure Control Plan for a healthcare facility is reducing the risk of needlesticks and other "sharps" injuries.**
 - The Centers for Disease Control estimates that contaminated sharps cause over 600,000 injuries to healthcare personnel each year.
- **When the injuries involve infectious agents such as hepatitis or HIV, the affected workers are at risk of contracting a bloodborne disease.**
 - One of the things OSHA has done to help combat the danger of needlesticks is create the “Needlestick Safety and Prevention Act”.
 - This mandates that Exposure Control Plans be re-evaluated at least once a year.
- **A major focus of these reviews is to make sure that your facility is doing everything it can to keep you safe. As a rule, the review must confirm that the Exposure Control Plan...**
 - Reflects any changes in technology that can eliminate or reduce exposure to bloodborne pathogens.
 - Documents the investigation as well as implementation of new medical devices that are designed to reduce or eliminate occupational exposure to bloodborne pathogens.
 - Incorporates the opinions of frontline employees whose interactions with patients expose them to potentially contaminated sharps.
- **OSHA’s Bloodborne Pathogens Exposure Control Plan has requirements for labeling materials and equipment and containers in your facility that may be contaminated with blood.**
 - Containers carrying any potentially infectious materials, such as blood or tissue, must be marked with a "biohazard" label.
- **These labels must also appear on any equipment and materials that are suspected of being contaminated.**
 - OSHA defines "contaminated" as indicating “...the presence or anticipated presence of potentially infectious materials on an item or surface”.
- **Biohazard labels are fluorescent orange-red, with the biohazard symbol in a contrasting color.**
 - The word "biohazard" is also marked on the lower portion of the label.

- **There are several "exceptions" to these labeling requirements.**
 - Individual containers of blood do not have to be labeled if they are placed inside another labeled container for transport or storage.
 - Facilities that follow “Standard Precautions” in handling all specimens do not have to use this type of labeling if the specimens are recognizable by the employees who normally work with them.
 - Labeled blood products that are released for transfusion or other clinical use are also exempt, as long as these specimens remain in the facility.
- **Common places that you may see biohazard labels include...**
 - Refrigerators and freezers containing blood or other potentially infectious materials.
 - Containers used to store, transport or ship these materials.
 - Contaminated equipment awaiting cleaning.
 - Containers of "Regulated Waste".
- **In this case "Regulated Waste" refers to...**
 - Potentially infectious materials like unused blood or spillage.
 - Items such as used bandages and dressings.
 - Contaminated bedding and towels.
- **Contaminated sharps, including needles, scalpel blades and broken glass, are also considered to be "Regulated Waste".**
 - So are containers that may have had infectious material in them.
- **To help you protect yourself from infection, your employer has compiled lists of job classifications and activities that may present a risk of exposure to bloodborne pathogens.**
 - These lists can be found in your facility’s Exposure Control Plan.
- **There are many ways that you and your employer can work to help reduce your risk of exposure to bloodborne pathogens. They include...**
 - The use of Standard Precautions, (remembering to treat all blood and body substances as if they are infectious).
 - Engineering controls.
 - Following "safe work practices".
 - The use of personal protective equipment.
 - Appropriate housekeeping practices.

- **"Engineering controls" refer to equipment or machinery that can minimize exposure. Your facility uses many of these already, such as:**
 - Puncture-resistant "sharps" containers.
 - Self-ventilating laboratory hoods.
 - Sharps that move engineered injury protections, such as self-sheathing needles.
- **"Safe work practices" reduce the potential for exposure by focusing on the safest ways to perform tasks.**
 - Handwashing is one important example.
- **If you have been involved in a situation where you may have been exposed to bloodborne pathogens, OSHA requires you to...**
 - Remove any gloves and personal protective equipment that you may have been wearing.
 - Wash your hands.
 - Use a paper towel to turn off the water.
- **If they may have been exposed to blood, you should also rinse your...**
 - Eyes.
 - Nose.
 - Other mucous membranes.
- **OSHA also addresses a number of other work practices in the Bloodborne Pathogens Standard.**
 - For instance, the Standard stresses the need to minimize any splashing, spraying or creation of droplets when you're dealing with potentially infectious samples.
- **"Housekeeping" practices are very important in controlling bloodborne pathogen exposure.**
 - Keeping written schedules as well as specifying the methods of decontamination that should be used is crucial.
- **If work surfaces are obviously contaminated, they must be cleaned immediately with an appropriate disinfectant.**
 - Otherwise surfaces should be cleaned at the end of each work shift.
- **Broken glassware should never be picked up by hand.**
 - Instead, use a brush and dustpan, tongs or other tools.

- **There are several "safe work practices" that must be followed when you're handling contaminated needles and sharps.**
 - They must not be bent.
 - They should not be recapped or removed unless there is no feasible alternative.
 - If they have to be recapped or removed, you must use a one-handed technique or a mechanical device.
- **Contaminated sharps must be discarded as soon as possible into appropriately labeled containers that are...**
 - Closeable.
 - Puncture-resistant.
 - Leak-proof.
- **These containers must be...**
 - Easily accessible.
 - Left upright.
 - Replaced routinely.
 - Never overfilled.
- **They must also be closed when they are handled.**
 - They are also subject to the same secondary container requirements as specimens.
- **Similar rules apply when handling any potentially infectious body substances or "Regulated Waste".**
 - This includes contaminated personal protective equipment, bandages or clean-up materials that are being disposed of.
- **These must all be placed in containers that are...**
 - Appropriately labeled.
 - Closeable.
 - Leak-proof.
 - Closed and secured during handling.
- **Sometimes, the items in the waste could puncture the primary container**
 - In these cases, a secondary container that is puncture-resistant and leak-proof must be used as well.

- **From dirty sheets to used hospital gowns and scrubs, there is always laundry to be done in a healthcare facility.**
 - That's why OSHA's Bloodborne Pathogens Standard addresses contaminated laundry.
- **OSHA advises that laundry should be handled as little as possible, bagged appropriately and never be sorted or rinsed at its originating location.**
 - You should always use labeled or color-coded bags when transporting laundry.
 - Bags must be leak-proof if the laundry is wet and shows a potential for "soak through".
 - All laundry must be handled with gloves as well as other appropriate protective equipment.
- **OSHA also addresses personal workplace activities in the Standard.**
 - For instance, you should never eat, drink or smoke in work areas where exposure to bloodborne pathogens could occur.
- **Never apply cosmetics, lip balm or contact lenses when you're in these areas, either.**
 - Food or drink should also never be stored in laboratory refrigerators or freezers.
- **The last type of "safe work practice" the Standard addresses deals with equipment.**
 - If a piece of equipment is contaminated with blood or other bodily substances, a "biohazard" label must be affixed to it immediately.
- **Once it is labeled, the equipment must be cleaned and decontaminated as soon as possible, using your facility's approved disinfectant, such as diluted bleach.**
 - If it cannot be totally decontaminated, the equipment must remain labeled as a "biohazard".
- **Protective coverings on equipment must be replaced if contaminated.**
 - Before any piece of equipment is serviced or shipped it must be inspected for contamination as well.
 - All employees or service personnel who may come in contact with the equipment must be notified of the location and type of contamination that exists there.

- **When it comes to protecting yourself from bloodborne pathogens, using the right personal protective equipment plays a huge role in your safety.**
 - PPE must be worn whenever there is a chance of being exposed to blood or other potentially infectious material.
- **Disposable gloves should be replaced as soon as possible after becoming contaminated.**
 - You should never attempt to decontaminate and reuse them.
- **"Disposables" should also be replaced immediately if they are torn or otherwise damaged.**
 - Removing rings before putting on your gloves will help to keep them from tearing.
- **Utility gloves, which are usually made of rubber or vinyl, are heavier and can be reused once they are decontaminated and remain in “good shape”.**
 - But they must be discarded if they are cracked, peeling or otherwise damaged.
- **Remember, you must change gloves and wash your hands after each exposure!**
 - If you are sensitive to latex, talk to your supervisor. Non-latex gloves will be available to workers with documented latex allergies.
- **Whenever there is a chance that fluids may splash or splatter, there are some extra precautions you should take.**
 - At a minimum, you need to wear a mask and eye protection.
 - Fortunately, there are a number of options to choose from.
- **Standard safety glasses help to protect the eyes from direct exposure from the front.**
 - "Side shields" can provide added coverage.
- **Safety goggles are the preferred eye protection to use against bloodborne pathogens.**
 - They fit snugly and can better guard against splashes and sprays from any direction.
- **In instances where you might be exposed to large splashes, or blood that has a high risk of being infected, you should wear a face shield too.**
 - It can protect not only your eyes, but the rest of your face as well.

- **"Pocket" and other face masks are designed to protect the mouth and lip area.**
 - They should be worn in addition to whatever eye protection is used.
- **Lab coats and other protective clothing can shield the body and effectively prevent the pass-through of fluids and other materials.**
 - The type of clothing you wear will depend on the risk of exposure in any given situation.
- **For example, gowns with total frontal coverage do a good job of protecting street clothes from potential contamination.**
 - Shoe covers should also be worn in these situations, as well as when cleaning up spills.
- **Your facility should have personal protective equipment in your work area for you.**
 - If you are unsure of the location of a particular item, ask your supervisor.
- **You also need to be aware of your facility's procedures for handling personal protective equipment after it has been worn.**
 - Know the location of collection and disposal points, and use them.
 - Remember, you must always take off your personal protective equipment before leaving your work area.
- **There are currently no vaccines that can prevent the bloodborne diseases HIV or hepatitis C.**
 - Therefore, it's very important to use "safe work practices" to reduce your risk of exposure to these viruses.
- **When it comes to hepatitis B, however, there is a vaccine that you can receive that will protect you from the virus.**
 - In fact, the hepatitis B vaccine has been available for some time.
 - It is administered in three injections, given several months apart.
- **Hepatitis B vaccines are safe. There is no possibility of infection through the vaccine itself.**
 - The most common side effect is temporary soreness at the injection site.
- **Your employer should have a free hepatitis B vaccination program for all employees who are at risk of exposure.**
 - Your supervisor can give you more information about any program you may have at your facility.

- **If you are at any risk, it's important that you do get vaccinated.**
- **If you want to refuse the vaccine for any reason, OSHA requires you to sign a declination form that states that...**
 - You are aware that you will remain at risk of acquiring hepatitis B.
- **If you are accidentally exposed to hepatitis B-infected blood and have not been vaccinated, your employer will offer you an "accelerated vaccination series", also at no cost.**
 - Early detection is important, because many forms of hepatitis B are slow to develop.
 - This “after the fact” vaccination may prevent infection if given in time.
- **As careful as everyone is, needlesticks, blood leakage and spills can still occur.**
 - So you need to know what to do in case of an emergency.
- **If you have come into contact with any potentially contaminated material, the first thing you should do is wash the affected area with soap and water as soon as possible.**
 - If the incident involves spill or leak, you should soak up the material, or contain it using absorbent barriers.
 - Next, any surface that could have been contaminated should be cleaned with your facility's approved disinfecting solution.
 - Once the situation has been dealt with, any contaminated materials should be disposed of in an approved waste disposal container.
- **Any "disposable" personal protective equipment that has been contaminated should also be discarded.**
 - Re-usable equipment should be recycled for decontamination.
- **There are several important things that need to be done after an exposure incident occurs.**
 - First, notify your supervisor, the Environmental Services Department, and the Infection Control Group.
 - You may also need to complete a written "incident report" that includes the time, date and location of the exposure, as well as all of the people involved in it.

- **If the exposure was caused by a contaminated sharp, your facility must record it in a "sharps injury log", as mandated in OSHA's "Needlestick Safety and Prevention Act".**
 - This log is specifically set up to keep track of "percutaneous" injuries, which penetrate the skin.
- **Every entry into the log must include the following information...**
 - The type and brand of device that was involved in the incident.
 - The department or work area where the accident took place.
 - An explanation of what happened.
- **Immediately following the exposure, your employer will give you a written summary of...**
 - The routes of exposure.
 - The circumstances under which the exposure occurred.
 - The identity of the individual from whom the potentially infectious material originated, if possible.
- **Your employer will also try to determine if the source individual's blood is infected with...**
 - Hepatitis B.
 - Hepatitis C.
 - HIV.
- **Then, you'll have an appointment with a healthcare professional.**
 - They will review the medical implications of the incident and how you should move forward.
- **Your employer will provide the healthcare professional with information such as...**
 - The type of work you were doing when the incident occurred.
 - The result of the source individual's blood test.
 - Your medical records which are relevant to possible treatment.
- **With your permission, your blood will also be tested to determine if an infection has occurred.**
 - Your situation will then be evaluated and discussed with you.
 - If appropriate, medical treatment may be recommended.

- **If hepatitis B vaccination is called for, it will be provided by your employer at no cost.**
 - Similarly, if it is determined that you were exposed to blood containing HIV, you may be prescribed a post-exposure treatment.
- **Once your risk of infection and treatment program has been decided, the healthcare professional will verify four things for your employer...**
 - That you have been informed of the results of their evaluation.
 - That you discussed any medical condition resulting from the exposure which would require follow-up.
 - Whether you should receive hepatitis B vaccinations or some other method of treatment.
 - Whether you have received the first injection in the hepatitis B vaccination series.

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- **HIV, hepatitis B and hepatitis C are all bloodborne pathogens that healthcare workers can be exposed to.**
- **OSHA's Bloodborne Pathogens Standard requires any workplace where there is a risk of exposure to blood or any other bodily fluids to have a written Exposure Control Plan.**
- **Facilities can reduce the risk of employees being exposed to bloodborne pathogens through using safe work practices, thorough housekeeping, maintaining materials and equipment and ensuring at-risk workers wear PPE.**
- **If an exposure incident does occur, it's important for you to know what your facility's protocol is for accidental exposure, as well as the post-exposure procedures that you need to follow.**
- **Now that you understand what bloodborne pathogens are, how to avoid contact with them and what to do in an exposure situation, you can help make your workplace safer and healthier for everyone... every day.**