OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) AND THE WORKPLACE

ABSTRACT

Contact or exposure to bodily fluids and dangerous levels of bacteria, viruses, or other microorganisms can cause infection and lead to the spread of pathogens from one patient to another. Other hazardous materials commonly found in healthcare facilities are cleaning products, medications, and substances used in therapeutic procedures. A healthcare facility is a place for healing but it is also a place where the health of the employees is at risk. Needle stick injuries are a frequent occurrence in healthcare facilities; using and disposing of needles and sharps have decreased the rate of needle stick injuries, but they are still common. All healthcare workers are required to know how to recognize, handle, and dispose of hazardous materials and how to avoid dangerous exposure.

Learning Goals:

1. Identify the reasons why illness or injury occurs in a healthcare facility.
2. State the OSHA Bloodborne Pathogens standard, Standard CFR 1910.1030, applicable to infection control and hazardous materials.
3. Identify workplace ergonomics to reduce injury in the workplace.
4. Identify when exposure to an infection or hazardous material occurs or is suspected.

Introduction

Healthcare facilities are places people go to for healing from illness or injuries. They are regarded as safe places; however, illness and injuries occur in healthcare facilities. The three areas where injury or illness may occur are exposure to infection, handling hazardous materials, and utilizing proper workplace ergonomics to avoid inefficient or improper workplace practices and procedures. The Occupational Safety and Health Administration (OSHA) is a government agency that is responsible for ensuring workplace and employee safety. This agency has developed standards to promote workplace safety. Paramount is the OSHA standard CFR 1910.1030 - *Bloodborne Pathogens*, and OSHA's OSHA Guidelines for Nursing Homes related to workplace ergonomics. Finally, guidelines are in place to direct health employees so they know what to do if they suffer an injury, or are exposed to an infection or hazardous material.

OSHA Standards

The OSHA General Duty Clause states: 1) Each employer shall furnish to each of his employees a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm. 2) Each employer shall comply with occupational safety and health standards promulgated under this Act. 3) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

Using the General Duty Clause as its basis, OSHA has developed standards that are intended to help *prevent* occupational injuries, and

both employers and employees - in this case healthcare facilities and healthcare professionals - are required to act in accordance with OSHA standards.

The OSHA rules and regulations that are pertinent to Certified Nursing Assistants (CNAs) and their day-to-day job requirements are reviewed in the following sections. Much of the information that CNAs must know about OSHA is contained in the OSHA standard CFR 1910.1030 - *Bloodborne Pathogens*, and this standard will be discussed in detail. In addition, the OSHA Guidelines for Nursing Homes: Ergonomics for the prevention of musculoskeletal disorders will be discussed.

Workplace Hazards, Healthcare Facilities, and OSHA

A healthcare facility, whether it is a hospital, a clinic, a long-term care center, or a private physician's office, is perceived as safe; however, illness and injuries can and do arise in healthcare facilities and there are three primary reasons for this occurrence.

Infection

Many patients come to healthcare facilities for treatment of injuries or medical conditions that are not communicable or contagious. Many patients do have infectious diseases and these can be spread to staff, and the staff can spread them to patients or to other staff members.

Individuals working in a healthcare facility must know how to protect themselves and patients from the transmission of infectious diseases.

Hazardous Materials

The term, hazardous materials, is often thought of as referring to dangerous chemicals, and healthcare facilities do use chemicals and other materials that are potentially harmful but hazardous materials can be reasonably defined as *anything* to which an exposure presents a risk to someone's health and safety. With this broader definition, hazardous materials are quite common in healthcare facilities. The hazardous materials that CNAs are routinely exposed to include blood, feces, urine, respiratory secretions and sputum, wound drainage and other body fluids, and anything that may have come into contact with one of the aforementioned body fluids, *i.e.*, bandages, surgical dressings, syringes, needles and other sharps, environmental surfaces, and contaminated personal protective equipment (PPE).

Bodily fluids and anything that contacts or is contaminated with body fluids may have dangerous levels of bacteria, viruses, or other microorganisms and contact or exposure can cause infection or spread these pathogens from one patient to another. Other hazardous materials commonly found in healthcare facilities are cleaning products, medications, and substances used in therapeutic procedures.

A healthcare facility is a place for healing but it is also a place where the health of the employees is at risk. The CNA is required to know how to recognize, handle, and dispose of hazardous materials.

Ergonomics

Ergonomics is defined as "*the science of ensuring safe interactions between people and what they work with*." Ergonomics designs tools and procedures that prevent injury in the workplace. For example, an ergonomically appropriate tool such as a computer workstation is

specially designed to prevent eye strain, back pain, and repetitive use wrist and hand injuries.

In healthcare facilities, ergonomics is primarily concerned with musculoskeletal injuries. Staff members often lift and/or move patients, and they need to perform numerous physical tasks that involve bending and carrying, amongst other strenuous activities. If the physical demands of the job are not performed properly, injuries are a real possibility.

The Occupational Safety and Health Administration has responsibility for workplace safety, and healthcare workplace safety involves: 1) infection control, 2) the proper handling and disposal of hazardous materials, and 3) ergonomics. The OSHA Bloodborne Pathogens standard, Standard CFR 1910.1030, contains the information about infection control and hazardous materials. A *bloodborne pathogen* is a microorganism that is present in human blood and can cause disease in humans. This includes, but is not limited to hepatitis B (HBV), hepatitis C (HCV), and human immunodeficiency virus (HIV). Because CNAs are expected to follow the recommendations and rules of the OSHA Bloodborne Pathogens standard, it will be discussed in-depth.

The discussion on the risk of exposure to hazardous materials will be limited to exposure to bloodborne pathogens and other potentially infectious materials; and, exposure to hazardous chemicals, *etc.*, will not be covered. Additionally, ergonomics is covered in the OSHA Guidelines for Nursing Home, OSAH 318-3R.

OSHA Standard CFR 1910.1030: Bloodborne Pathogens

Brief Review

The OSHA standard CFR 1910.1020, Bloodborne Pathogens, has guidelines and rules that when applied and followed will help prevent occupational exposures to blood and other potentially infectious materials. The Bloodborne Pathogens standard is long, somewhat complex, and contains quite a lot of information but its primary goals are short and simple: *plan, prepare and if necessary, treat*.

Primary Goals of the Bloodborne Pathogens Standard

- **Establish a *plan* to prevent exposures.**
- ***Prepare* employees with the training and equipment needed to prevent exposure to blood and other potentially infectious materials.**
- ***Treat* employees with post-exposure medical care.**

All employers must comply with the Bloodborne Pathogens standard if their employees may be or are exposed to blood or other potentially infectious materials. The specific requirements of employers in regards to the Bloodborne Pathogens Standard are highlighted below.

- Establishment of an exposure control plan: The plan must be written and employees must have access to it. The plan should identify workplace hazards, identify employees who will or may be exposed to these hazards, and make provision for avoiding and treating dangerous exposures.

- Annual updating of the exposure control plan.
- Implement Universal Precautions.
- Identify and use engineering controls: Engineering controls are defined in the Bloodborne Pathogens standard as "... *controls (i.e., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.*"
- Identify and ensure the use of work practice controls: Work practice controls "... *that reduce the possibility of exposure by changing the way a task is performed, such as appropriate practices for handling and disposing of contaminated sharps, handling specimens, handling laundry, and cleaning contaminated surfaces and items*."
- Provide personal protective equipment (PPE): The employer is required to provide employees with the PPE that is needed for them to safely do their jobs. The employer is also required to train the employees in the use of PPE and repair or replace the PPE when necessary.
- Provide HBV vaccination at no cost to the employee.
- Provide post-exposure prophylaxis and counseling at no cost to employees after an exposure incident.
- Use labels and signs to clearly identify hazards, *i.e.*, signs or labels attached to biohazard containers.
- Provide training for employees when first hired and annually thereafter on pertinent aspects of infection control, use of PPE, what to do after an exposure, *etc.*

- Maintain records of employee training, implementation of infection control practices, and employee exposures to infectious materials such as needle sticks or sharps injuries.

Employees who will or may have exposure to blood and/or infectious materials are also required to understand and use the guidelines of this standard. Doing so will keep employees safe, keep the patients safe, and prevent the transmission of infectious diseases; and compliance is mandatory. The Bloodborne Pathogens standard is where most of the information about OSHA and a healthcare worker's job, such as a CNA, can be found; and it can be found on the OSHA website, www.OSHA.gov.

A considerable amount of the content of the OSHA standards raised here is concerned with the responsibilities of employers but the General Duty Clause mentioned above clearly states that each *employee* shall comply with occupational safety and health standards and all rules, regulations, and orders. Employers *and* employees must comply with OSHA standards to ensure the workplace is safe.

The individual topics contained in Standard CFR 1910.1030 that are the most pertinent to a CNA's practice include: 1) Bloodborne pathogens and infection control, 2) Universal Precautions, 3) Safe use of needles and sharps, 4) Hand washing, and 5) The use of personal protective equipment.

The Bloodborne Pathogens standard is for the most part self-explanatory, but it does use terms that have specific definitions, as identified below.

Definitions: Bloodborne Pathogens Standard

Bloodborne Pathogens

Microorganisms that are present in human blood and can cause disease in humans are referred to as bloodborne pathogens. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Contaminated

The presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface is considered contaminated.

Decontamination

Decontamination is the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Exposure Incident

An exposure incident refers to a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Occupational Exposure

Occupational exposure is a reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Other Potentially Infectious Materials

- Human Body Fluids:
  Semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids

- Any unfixed tissue or organ (other than intact skin) from a human (living or dead)

- HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions, including blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral

Piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

Personal Protective Equipment

Specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (*i.e.*, uniforms, pants, shirts or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

Sharps

An object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

Sterilize

The use of a physical or chemical procedure to destroy all microbial life.

Universal Precautions

All human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Bloodborne Pathogens and Infection Control

The OSHA Bloodborne Pathogens standard requires CNAs to:
1) recognize situations in which they may be exposed to blood and/or bodily fluids, 2) know how to protect themselves and others in these situations from contamination from blood and/or bodily fluids, and 3) know what to do if they have, or suspect they have been exposed to blood or other potentially infectious materials.

Recognition

Recognition of any situation or any patient care procedure where there is exposure to blood or other potentially infectious material is perhaps the simplest of the three requirements. Situations where the CNA may be exposed to infectious material is an *at-risk situation*, and all body fluids or anything that may be contaminated with body fluids should be considered potentially infectious.

Remember that disease transmission from exposure to blood and body fluids can happen by *ingestion*, *inhalation*, *needle sticks*, *skin/splash contact*, and *splashes* to the eye, and the exposure can be very brief and barely noticeable. Recognition of at-risk situations also requires the CNA to know the definition of other potentially infectious materials listed above.

If the CNA has any doubt whether or not he/she have been exposed to blood or infectious material, the CNA should contact a supervisor, and not attempt to make this decision independently and to always err on the side of caution.

Protection

Protection against exposure to blood and other potentially infectious materials involves the use of PPE, handwashing, and the proper disposal of contaminated material. The uses of PPE and handwashing will be discussed separately. The disposal of hazardous material will be covered in various remaining sections.

Post-exposure Treatment

Following the correct post-exposure procedures is very important; it protects the healthcare worker's health and legal rights. Each workplace is required to have a post-exposure protocol. It is not the employee's responsibility to initiate this protocol but it is the employee's responsibility to notify the appropriate person if there has been an exposure so that an assessment of the situation can be made and treatment initiated, if necessary. Post-exposure treatment will be briefly discussed later on.

Hepatitis B virus can survive on environmental surfaces for up to 7 days, and HCV can survive in a syringe for up to 7 days and on environmental surfaces for up to 5 days, so an at-risk situation is not always obvious. If the CNA has any doubt as to whether or not exposure to a blood-borne pathogen or other infectious material has occurred, a supervisor or whoever is responsible for managing these occupational exposures must be contacted. Human immunodeficiency virus (HIV) is very unlikely to survive outside the body for more than a few hours.

What is the risk of infection if the CNA has been exposed? This depends on many factors; the type of pathogen exposed to, the route of exposure, the amount of the virus or other microorganism in the fluid, the health of the exposed person's immune system, the type of injury, *i.e.*, a deep puncture with a large, hollow bore needle versus a splash of blood to the eye, the duration of the exposure, the type of fluid exposed to, and the amount of blood or other body fluid involved in the exposure.

Risk of Infection after Exposure to HBV, HCV, HIV

HBV - Needle stick exposure: 6-31%

HBV - Mucous membrane exposure: Rare

HCV - Needle stick exposure: 1.8%

HCV- Mucous membrane exposure: Rare

HIV - Needle stick exposure: 0.3%

HIV - Mucous membrane exposure: 0.09%

Most exposures and infections with HBV, HCV, and HIV have occurred after exposure to blood. Hepatitis B and C viruses and HIV have been isolated in body fluids such as ascites, bile, breast milk, cerebrospinal fluid, feces, menstrual fluid, naso-pharyngeal fluids, saliva, semen, spinal fluid, sweat, and urine. The risk of infection from an exposure to these fluids is very low or infection from exposure has not been reported.

If any of the body fluids/secretions are visibly contaminated with blood or if someone was exposed to a very large quantity of the fluid, then the risk would obviously be much greater.

Case Scenario:

A CNA is caring for someone with an infected surgical incision. The surgical dressing must be changed, and the CNA has received training on the proper techniques for this procedure.

The CNA must *recognize* this as a situation in which there may be exposure to blood and/or bodily fluids because the dressing covers an infected surgical incision. There is likely to be pus and blood on the dressing because of the infection and because the skin and tissues were cut to make the incision. To *protect* the patient and the CNA, the CNA should first wash the hands, and wear disposable gloves when touching the wound and the dressing material.

To protect others from being contaminated, the CNA should discard the dressing material in a container that is clearly marked hazardous waste, and should discard the gloves in the same container or a similar one, and should wash the hands. If, for some reason, the CNA comes into contact with blood or bodily fluids during the procedure - perhaps a drop of blood falls onto an area of the skin that is not covered - or if the CNA thinks that possible exposure may have occurred (but not sure), the CNA must immediately notify a supervisor so that the CNA can receive the proper post-exposure assessment and if needed, treatment.

Universal Precautions

Most actively working CNAs were taught to practice infection control by using *Standard Precautions*. The requirement in the Bloodborne Pathogens standard is that *Universal Precautions* be used. The use of two terms that both refer to workplace infection control practices is confusing, but a short review will clarify the issue.

In 1987, the Centers for Disease Control and Prevention (CDC) published a document entitled: *Update: Universal precautions for prevention of transmission of human immunodeficiency virus, hepatitis B virus, and other bloodborne pathogens in health-care settings*. The

document stated that healthcare workers should isolate and avoid contact with all body fluids, not just blood, and healthcare professionals should consider all patients " *... as potentially infected with HIV and/or other blood-borne pathogens and ... adhere rigorously to infection-control precautions for minimizing the risk of exposure to blood and body fluids of all patients.*"

The Bloodborne Pathogens standard reads as follows: "*Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials*."

Universal precautions provided instructions for: 1) hand washing, 2) the use of gloves, 3) the use of PPE, 4) the safe use of needles, and other sharps, and 5) disposal of hazardous waste. The Universal Precautions document was amended in 2000 to include the Needle Stick Safety and Prevention Act (This is discussed in the next section). In 1996, the Centers for Disease Control and Prevention(CDC) took the Universal Precautions and another infection control concept, *body substance isolation*, (the practice of isolating all body substances (blood, urine, feces, tears, *etc.*, of individuals undergoing medical treatment), and combined them to form Standard Precautions. The Standard Precautions document includes all of the requirements of Universal Precautions plus safe injection practices and respiratory hygiene and cough etiquette.

Universal Precautions and Standard Precautions are then essentially the same, and if the CNA *understands and practice Standard*

Precautions and is in compliance with the OSHA requirement for the use of Universal Precautions.

Safe Use of Needles and Sharps

The Bloodborne Pathogens standard provides specific guidance for the safe use of needles and sharps. Much of this information was derived from the Needle Stick Safety and Prevention Act, a Congressional Act that directed OSHA to amend the Bloodborne Pathogens standard (which already had rules and regulations about needle and sharps safety) so that it would meet the following requirements.

- A workplace in which the employees are, or may be exposed to needles and sharps must have proper disposal containers for needles and sharps; and needleless systems, self-sheathing needles, and needles and sharps that have been designed to prevent needle stick and sharps injuries must be used.
- Employers must train employees in needle and sharps safety procedures.
- Whenever possible employees must be involved in deciding which needle and sharps equipment are used.
- The employer must maintain a log that records all needle and sharps injuries. At a minimum, the log should record who was involved, when and where the incident occurred, the type and brand of the needle or sharp that was involved, and an explanation of how the incident occurred. The log should be maintained in a way that protects the confidentiality of the employee.

The issue of needle stick injuries and their prevention has received much attention because of the number of these incidents and the

potential for harm. Needle stick injuries are a frequent occurrence in healthcare facilities. Education and new techniques for using and disposing of needles and sharps have decreased the rate of needle stick injuries, but they are still common. Some sources estimate the number of needle stick injuries in healthcare facilities to be 800,000 or more each year, and needle stick injuries can cause infection with HBV, HCV, and HIV.

There are many reasons why needle stick injuries occur, and the two most common are 1) improper use and 2) improper disposal. Improper use includes, but is not limited to recapping a syringe, improper transfer of a needle or a sharp, removing a needle from a syringe, trying to bend or break a needle, and walking with a needle or a sharp in the hand. Improper disposal involves failing to put the contaminated needle or sharp in a designated and labeled sharps container and/or placing it in a sharps container that is full.

Although not part of the Bloodborne Pathogens standard, any discussion of the safe use of needles and sharps should mention *safe injection practices*. Safe injection practices are part of the CDC's Standard Precautions, and they are methods used to maintain the sterility of needles, syringes, intravenous (IV) lines, and injectable medications. CNAs do not prepare or administer injectable medications, but CNAs should be familiar with safe injection practices as they are an important part of infection control and prevention of disease transmission. Examples of safe injection practices are provided below.

Safe Injection Practices

Use aseptic technique to avoid contamination of sterile injection equipment.

Needles and syringes are sterile, single-use items; they should not be reused for another patient or to access a medication or solution that might be used for a subsequent patient.

Use intravenous bags, tubing and connectors for one patient only and dispose appropriately after use. Consider a syringe or needle/cannula contaminated once it has been used to enter or connect to a patient's intravenous infusion bag or administration set.

Use single-dose vials for parenteral medications whenever possible. Do not administer medications from single-dose vials or ampules to multiple patients or combine leftover contents for later use.

Speak up if seeing a colleague not following safe injection practices.

Handwashing

The more time spent in direct contact with patients the greater the number of potentially dangerous pathogens that healthcare workers will touch with their hands. Studies have estimated that 20-40% of all hospital-acquired infections are caused by cross-contamination by the hands of healthcare workers.

Handwashing is one of the most important methods of infection control and proper use of handwashing can significantly reduce the rate of staff to patient infections. The OSHA Bloodborne Pathogens standard guidelines regarding handwashing are:

- Employers shall provide handwashing facilities which are readily accessible to employees.
- When provision of handwashing facilities is not feasible, the employer shall provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic

towelettes. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

- Employers shall ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.
- Employers shall ensure that employees wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials.

The OSHA guidelines for handwashing are not significantly different than the handwashing techniques CNAs already use. Handwashing should be performed before and after each patient contact, and it should be performed after each patient contact. Handwashing should be done with soap and water. If an appropriate soap and water are not immediately available an alcohol-based disinfectant can be used, but the CNA should also wash the hands with soap and water as soon as possible.

If the patient care provided does not require the CNA to use disposable gloves or the CNA did not have contact with blood or a potentially infectious material, it is acceptable to simply use an alcohol-based disinfectant. However, if the hands are visibly soiled they should be washed with soap and water, not an alcohol-based hand rub.

Alcohol-based hand rubs are quick, convenient, and easy to use and they have been shown to be an effective method for removing microorganisms from the hands. They are also faster to use than soap

and water and are less irritating to the skin. However, if there is available time or the hands are visibly soiled, soap and water is the preferred method for handwashing.

Personal Protective Equipment

The Bloodborne Pathogens standard guidelines regarding personal protective equipment (PPE) are essentially the same as what CNAs use in their practice. They are self-explanatory and, as with all OSHA standards, there are employer *and* employee responsibilities concerning PPE. The employer is required to provide and maintain PPE and train employees in how to use it, and employees are required to use PPE correctly.

Each workplace should have guidelines for the use of PPE: if there is a difference between the OHSA guidelines and those of an employee's workplace check, this should be discussed with supervisor.

Bloodborne Pathogens: Standard Precautions and PPE

When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgment, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

The employer shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

The employer shall clean, launder, and dispose of personal protective equipment at no cost to the employee.

The employer shall repair or replace personal protective equipment as needed to maintain its effectiveness, at no cost to the employee.

If a garment(s) is penetrated by blood or other potentially infectious materials, the garment(s) shall be removed immediately or as soon as feasible.

All personal protective equipment shall be removed prior to leaving the work area.

When personal protective equipment is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

Gloves shall be worn when it can be reasonably anticipated that the employee may have hand contact with blood, other potentially infectious materials, mucous membranes, and non-intact skin; when performing vascular access procedures except as specified in paragraph (d)(3)(ix)(D); and when handling or touching contaminated items or surfaces.

Disposable (single use) gloves such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.

Disposable (single use) gloves shall not be washed or decontaminated for re-use.

Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

Using PPE correctly is not difficult but it is not always easy to know what PPE is required for a particular situation. There is no simple answer for this and the CNA must use his/her own professional judgment, however, the PPE that is needed for a patient care situation always depends on what the CNA is doing and what, if any, infectious risks are present.

Determining the potential infectious risk of patient care situations is the responsibility of someone with specific training. If there are specific needs for PPE, this should be clearly posted but if not, Standard Precautions should be used.

OSHA: Bloodborne Pathogens And Hazardous Materials

The Bloodborne Pathogens standard has specific guidelines regarding the proper handling and disposal of hazardous materials. The guidelines will be familiar to experienced CNAs, if not in their form than certainly in their basic principles. A few examples of these guidelines that are most pertinent to CNAs are listed below.

- Immediately or as soon as possible after use, contaminated needles and sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be: puncture resistant, labeled or color-coded in accordance with this standard, leak proof on the sides and bottom, maintained upright throughout use, and replaced routinely and not be allowed to overfill.

- Do not try and clean up blood spills or mercury spills. These must be cleaned up using specific techniques and in the case of mercury, improper cleanup technique can create a dangerous situation.

- When personal protective equipment is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

- Regulated and potentially contaminated waste must be placed in containers which are labeled or color-coded as containing hazardous material, never in ordinary trash receptacles.

- Contaminated laundry shall be placed and transported in bags or containers labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard.

- Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through of or leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior.

- The employer shall ensure that employees who have contact with contaminated laundry wear protective gloves and other appropriate personal protective equipment.

OSHA And Ergonomics

Lifting, positioning and re-positioning, and transferring patients and helping patients ambulate are common causes of musculoskeletal injuries. These activities involve repetitive motion and awkward, strenuous positions, and the OSHA Guidelines for Nursing Homes: Ergonomics for the prevention of musculoskeletal disorders,

recommends that "*manual lifting of patients should be minimized in all cases and eliminated when feasible*." These Guidelines note that injury prevention programs that focus on these issues can reduce musculoskeletal injuries, and the Guidelines recommend that employers should have in place an ergonomics program that:

- Provides management support
- Involves employees
- Identifies problems
- Implements solutions
- Addresses reports of injuries
- Provides training
- Evaluates ergonomics efforts

These Guidelines are different from the Bloodborne Pathogens standard in that they are recommendations and a failure of employers to implement them is not a violation of OSHA standards or a violation of the General Duty Clause. However, these Guidelines do provide many specific recommendations for lifting positioning, re-positioning and transferring of patients, and helping patients ambulate. Although the title of these Guidelines includes the term *nursing homes*, these Guidelines can obviously be used in any patient care situation.

The following ergonomics example helps to illustrate safety recommendations related to patient transfer with the use of a gait belt/transfer belt with handles.

Ergonomics Guideline: *Example*

Gait belts/transfer belts with handles.

When to Use:

Use when transferring residents who are partially dependent, have some weight-bearing capacity, and are cooperative. Transfers include 1) bed to chair, 2) chair to chair, or 3) chair to car. They are used when repositioning residents in chairs, supporting residents during ambulation, and in some cases when guiding and controlling falls or assisting a resident after a fall.

Points to Remember:

More than one caregiver may be needed. Belts with padded handles are easier to grip and increase security and control. The caregiver should always transfer to a resident's strongest side. Good body mechanics should be used and a rocking and pulling motion rather than lifting when using a belt. Belts may not be suitable for ambulation of heavy residents or residents with recent abdominal or back surgery, abdominal aneurysm, *etc.*

Belts should not be used for lifting residents. The belt should be securely fastened and should not be easily undone by the resident during transfer. A layer of clothing between the residents' skin and the belt should be ensured to avoid abrasion. For use after a fall, the resident should always be assessed for injury prior to movement. If the resident can regain standing position with minimal assistance, the gait or transfer belts with handles should be used to aid the resident.

Post-Exposure Assessment, Treatment, and Follow-Up

The Bloodborne Pathogens standard requires employers to have an exposure control plan that provides for post-exposure assessment,

treatment, and follow-up if an employee has been exposed to a bloodborne pathogen or another potentially infectious material.

Both the employee and the source (if the source is a patient) must be assessed. The results of any previous blood tests for HBV, HCV, and HIV should be obtained, and assessment may require blood testing for HBV, HCV, and HIV. The tetanus immunization status of the exposed person should be determined if the exposure involved a needle stick or a sharps injury, and the exposed person's health history (*i.e.*, previous or current illnesses or medical conditions, current medication list) should be determined.

In addition, careful investigation and documentation of the circumstances of the exposure should be done, in particular: the time of the exposure, what was being done at the time (*i.e.*, handling potentially hazardous material, putting a used needle into a hazardous waste container), the duration of the contact, and any first aid procedures that were done. The HBV vaccination status of the exposed person and the source (if the source was a patient) should be determined.

If a CNA has had a needle stick or a sharps injury, the wound should be washed with soap and water. If a mucous membrane or skin exposure has occurred, the CNA should flush the area with water or irrigate the eyes (if it was an ocular exposure) with water or saline. *No other first aid measures are needed or recommended*. The need for post-exposure treatment will depend on factors such as the pathogen involved, the immunization status of the exposed person, and the degree of risk for infection from the exposure. Deciding who to treat

after exposure to a bloodborne pathogen or another infectious material can be quite complicated. Treatment, if needed, should be provided at no cost to the employee, and the employer is responsible for assessment of the effectiveness of the treatment, counseling (if needed) and evaluation of the exposed person's medical status, as needed.

Summary

Bodily fluids and anything that contacts or is contaminated with body fluids may have dangerous levels of bacteria, viruses, or other microorganisms. Contact or exposure by healthcare workers can cause infection or spread these pathogens from one patient to another. Other hazardous materials commonly found in healthcare facilities are cleaning products, medications, and substances used in therapeutic procedures.

A healthcare facility is a place for healing but it is also a place where the health of the employees is at risk. The Certified Nursing Assistant is required to know how to recognize, handle, and dispose of hazardous materials and how to avoid dangerous exposure.

The Occupational Safety and Health Administration is concerned with making sure that workers are safe in the workplace. For CNAs, that means that the major health and injury risks associated with their job, such as the risk of infection, exposure to hazardous materials, and ergonomic injuries, are clearly identified, and that there are plans and training in place to prevent them. Moreover, employers are required to provide employees the equipment they need to protect themselves from these hazards. If there is an issue of safety in a healthcare

workplace or healthcare workers need more information, OSHA can be contacted at www.osha.gov or at 1-800-321-6742.