Blood Borne Pathogens / Infection Control

2022

Prevention and Containment of Communicable Disease

In 1991, OSHA issued final regulations on job exposure to blood-borne pathogens – the bacteria and viruses present in human blood and body fluids that can cause disease in humans. These pathogens include hepatitis B virus, HIV virus and hepatitis C virus. OSHA concluded that employers can reduce or remove hazards from the workplace by using a combination of engineering and work practice controls, personal protective clothing and equipment, training, medical surveillance, hepatitis B vaccination, signs and labels and other provisions.

This section will describe the prevention and containment of disease and conditions that staff may encounter in a group home.

Prevention and Containment of Communicable Disease Learning Objectives

Understand how infection occurs.

Recognize the pathogens that cause diseases.

Understand how diseases are spread.

Recognize the signs and symptoms, mode of transmission and infective material for diseases that cause concern. Understand how to protect self from disease transmission.

Understand the steps to follow if an exposure occurs.

How Infections Occur

The disease begins when a germ (pathogen) gets into the body. When pathogens enter the body they can sometimes overpower the body's defense system and cause illness. This illness is an infection. Most infections are caused by one of six types of pathogens. These are listed in the chart below:

Pathogen	**Diseases and Conditions They Cause**
Viruses	Hepatitis, measles, mumps, chicken pox, meningitis, rubella, influenza, warts, colds, herpes, shingles, HIV infection including AIDS, genital warts
Bacteria	Tetanus, meningitis, scarlet fever, strep throat, tuberculosis, gonorrhea, syphilis, chlamydia, toxic shock syndrome, Legionnaires' disease, diphtheria, food poisoning
Fungi	Athlete's foot, ringworm
Protozoa	Malaria, dysentery
Rickettsia	Typhus, Rocky Mountain spotted fever
Parasitic Worms	Abdominal pain, anemia, lymphatic vessel block-age, lowered antibody response, respiratory and circulatory complications

How Diseases Spread

For a disease to be transmitted all four of the following conditions must be met:

If one or more of these conditions are missing, a disease cannot be transmitted. Pathogens enter the body in the following four ways:

Direct contact: Touching body fluids from an infected person.

Indirect contact: Touching objects that have touched the blood or another body fluid of an infected person.

Airborne: Breathing in droplets that became airborne when an infected person coughs or sneezes.

Vector-borne: Through a bite from an infected animal or insect.

Diseases That Cause Concern

Some diseases, such as the common cold, are passed from one person to another more easily than others. The common cold is short-lived and rarely serious. Other diseases cause more severe problems and can last for months or even death. Following are diseases that can have serious consequences if transmitted.

Disease	**Signs and Symptoms**	**Mode of Transmission**	**Infective Material**
Herpes	Lesions, general ill feeling, sore throat	Direct contact	Broken skin, mucus membranes
Meningitis	Respiratory illness, sore throat, nausea, vomiting	Airborne, direct and indirect contact	Food and water, mucus
Tuberculosis	Weight loss, night sweats, occasional fever, general ill feeling	Airborne	Saliva, airborne droplets
Hepatitis	Flu like symptoms, jaundice	Direct and indirect contact	Blood, saliva, semen, feces, food, water, other products
HIV	Fever, night sweats, weight loss, chronic diarrhea, severe fatigue, shortness of breath, swollen	Direct and indirect contact	Blood, semen, vaginal fluid

Protecting Yourself From Disease Transmission

Read and be familiar with the Exposure Control Plan. Employees must be provided with information and training regarding hazards of disease transmission, signs and symptoms, medical surveillance and therapy, site-specific protocols including the use of engineering controls.

Immunizations. The following immunizations are recommended: Diphtheria, Pertussis, Tetanus (DPT), Polio, Hepatitis B, Measles, Mumps, Rubella, (MMR), Influenza.

Precautions. Precautions taken to prevent occupational-risk exposure to blood or other body fluids containing visible blood are known as Universal Precautions. Precautions taken to isolate or prevent the risk of exposure from any other type of bodily substance are known as Body Substance Isolation. Regardless of the type of exposure risk basic precautions and safe practices must be followed each time care is provided. The following four areas must be followed:

Personal hygiene: frequent handwashing, proper grooming.

Personal protective equipment: includes all equipment and supplies that keep you from direct contact with infected materials. These include gloves, gowns, masks and face shields, protective eyewear, and resuscitation devices. To minimize your risk of exposure, follow these guidelines when using protective equipment:

Wear disposable gloves when it is possible you will contact blood or body fluids either directly or indirectly.

Remove gloves properly. Never touch the soiled surface.

Discard gloves that are discolored, torn or punctured.

Never reuse gloves. Gloves are for single use only.

Avoid handling items such as pens, keys, door knobs when wearing soiled gloves.

Change gloves between recipients.

Cover cuts, scrapes, or skin irritation with band aids before putting on gloves.

Use a breathing device if you have to give rescue breaths.

Wash your hands after removing gloves.

Engineering and work practice controls: controls by the employer that isolate or remove the hazard from the workplace. This includes things such as puncture resistant containers for sharps and mechanical needle recapping devices. Work practice controls are based on the way an employer and employee behave than on a physical device. Work practice controls include:

Avoiding needle stick injuries by not trying to bed or recap needles.

Placing sharp items in a puncture proof container.

Cleaning and disinfecting all equipment possibly soiled by blood or other body fluids.

Washing hands thoroughly with soap and water.

Avoiding eating, drinking, smoking or touching mouth, eyes or nose in work areas where an exposure may occur.

Having handwashing facilities accessible.

Providing antiseptic towelettes or hand cleanser where handwashing facilities are not available.

Cleaning and disinfecting: Clean and disinfect equipment to prevent exposure to infectious pathogens. Use labeled containers for items contaminated with blood. Keep work area clean and sanitary. Follow the written cleaning schedule. Review the plan that describes the steps to take if a spill containing blood or other body fluids should occur.

If An Exposure Occurs

If you think that you have been exposed to an infectious disease, wash any area of contact as quickly as possible then complete an incident report. Write what happened that led to the exposure, describe the exposure and what you did after the exposure. Notify your supervisor/home manager immediately. You should receive a medical evaluation, counseling and post-exposure care.

SARS-CoV-2 / COVID-19

Cause/Etiology

A severe acute easily spread viral illness of the respiratory tract.

Transmission

The virus is easily transmitted from person to person by direct deposition of virus laden large droplets onto the mucosal surfaces of the upper respiratory tract of a person during close contact with an infected person as well as by droplet nuclei or small particle aerosols. This occurs during coughing, sneezing, talking, etc. when susceptible persons are in close proximity to the infected person. The virus may live for hours in dried mucous and on environmental surfaces. (ie) telephone, door knobs, etc.) This is why hand washing is imperative in preventing the spread of the illness. Key in prevention however is social distancing and wearing a mask.

Signs & Symptoms

COVID-19 has a wide range of symptoms reported- ranging from mild symptoms to severe illness. Symptoms may appear 2-14 days after exposure to the virus. Abrupt fever, usually above 100.0 degrees and respiratory signs: cough, shortness of breath or difficulty breathing, congestion or runny nose, sore throat. Other symptoms are fatigue, muscle or body aches, headache, new loss of taste or smell, nausea, vomiting, and diarrhea. Seek emergency medical attention with trouble breathing, persistent pain or pressure in the chest, new confusion, inability to wake or stay awake, bluish lips or face.

Treatment

Treatment is case by case basis and is dependent on disease severity and need for supplemental oxygen. Physicians can prescribe antiviral medication and/or a corticosteroid as they deem necessary. However, as with any medication, these too have unwanted side effects that may make it impracticable to use with some persons. Treatment guidelines are changing frequently the more we learn and understand about this disease.

Prevention

Currently the best prevention is wearing a mask, stay at least 6 feet (about 2 arm lengths) from others who don't live with you, and avoid crowds. Hand washing is the number one defense in the fight against any infection and one of the key elements of preventing the spread of COVID-19. Use soap and water when at all possible. Use hand sanitizer if soap and water aren't available. If you are sick stay at home except to get medical care. Isolate yourself from other members of your family. As of December 31st 2020, two vaccines were approved by the FDA for emergency use. For more information go to https://www.cdc.gov/coronavirus/2019-ncov/vaccines/8-things.html