

Infection Control Update 2008:

**What Home Health Aides &
Attendants Need To Know**

Satellite Conference and Live Webcast

Wednesday, September 10, 2008

2:00 - 4:00 p.m. (Central Time)

Produced by the Alabama Department of Public Health
Video Communications and Distance Learning Division

Faculty

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Objectives

- **Discuss the basic principles of Standard Precautions and how they relate to home care workers.**
- **List three respiratory illnesses of concern for 2008.**
- **Name the routes of transmission for communicable disease.**

Infection Control

For an infection to occur an organism must:

- **Enter the body**
- **Grow and multiply**
- **Cause a response**

Routes of Transmission

- **Contact**
 - **Direct**
 - **Indirect**
 - **Droplet**
- **Vehicle**
- **Airborne**
- **Vector**

Infection Control

- **Standard Precautions**
 - **Consider all patients to be potentially infectious**
 - **Use appropriate barrier precautions at all times**

OSHA Bloodborne Pathogens

Be knowledgeable about the 3 most Common bloodborne pathogens encountered as a healthcare worker:

- Hepatitis B
- Hepatitis C
- HIV/AIDS

Occupational Transmission

- Injuries involving needles or sharps
- Mucous membrane exposures (eyes, nose or mouth)
- Contact with non-intact skin

Bloodborne Pathogens

- Transmission of bloodborne pathogens occurs when blood or body fluids from an infected person enters the body of a person who is not immune.
- Routes of transmission:
 - Sexually
 - Mother to newborn at birth
 - Sharing hypodermic needles

Other Precautions

- Contact Precautions
 - Use for patients with known or suspected infections that can be transmitted by contact (touch). Includes: MRSA skin infections
- Droplet Precautions
 - Use for patients with known or suspected infections that are found in the respiratory droplets. Includes: Seasonal influenza, Meningococcal meningitis

Other Precautions

- Airborne Isolation
 - Used for patients known or suspected to be infected with infectious agents transmitted person-to-person by the airborne route. Includes: tuberculosis, measles, chickenpox.

Personal Protective Equipment Definition

- “Specialized clothing or equipment worn by an employee for protection against infectious materials” (OSHA)

Alabama Department of Public Health Responsibilities

- Provide appropriate PPEs
- Ensure PPE's are worn and disposed correctly
- Recommend when, what and how to use PPE

Types of PPE Used in Healthcare Settings

- Gloves – protect hands
- Gowns/aprons – protect skin and/or clothing
- Masks and respirators– protect mouth/nose
 - Respirators – protect respiratory tract from airborne infectious agents

Types of PPE Used in Healthcare Settings

- Goggles – protect eyes
- Face shields – protect face, mouth, nose, and eyes

Gloves

- Purpose – patient care, environmental services, other
- Glove material – vinyl, latex, nitrile, other
- Sterile or nonsterile
- One or two pair
- Single use or reusable

Do's and Don'ts of Glove Use

- Work from “clean to dirty”
- Limit opportunities for “touch contamination” - protect yourself, others, and the environment
 - Don't touch your face or adjust PPE with contaminated gloves
 - Don't touch environmental surfaces except as necessary during patient care

Do's and Don'ts of Glove Use

- Change gloves
 - During use if torn and when heavily soiled (even during use on the same patient)
 - After use on each patient
- Discard in appropriate receptacle
 - Never wash or reuse disposable gloves

Gowns or Aprons

- Purpose of use
- Material
 - Natural or man-made
 - Reusable or disposable
 - Resistance to fluid penetration
- Clean or sterile

Face Protection

- Masks – protect nose and mouth
 - Should fully cover nose and mouth and prevent fluid penetration
- Goggles – protect eyes
 - Should fit snugly over and around eyes
 - Personal glasses not a substitute for goggles
 - Anti-fog feature improves clarity

Face Protection

- Face shields – protect face, nose, mouth, and eyes
 - Should cover forehead, extend below chin and wrap around side of face

Respiratory Protection

- Purpose – protect from inhalation of infectious aerosols (e.g., Mycobacterium Tuberculosis)
- PPE types for respiratory protection
 - Particulate respirators
 - Half- or full-face elastomeric respirators
 - Powered air purifying respirators (PAPR)

Sequence for Donning PPE

- Gown first
 - Mask or respirator
 - Goggles or face shield
 - Gloves
- *Combination of PPE will affect sequence. Be practical.

How to Don a Gown

- Select appropriate type and size
- Opening is in the back
- Secure at neck and waist
- If gown is too small, use two gowns
 - Gown #1 ties in front
 - Gown #2 ties in back



How to Don a Mask

- Place over nose, mouth and chin
- Fit flexible nose piece over nose bridge
- Secure on head with ties or elastic
- Adjust to fit



How to Don a Particulate Respirator

- Select a fit tested respirator
- Place over nose, mouth and chin
- Fit flexible nose piece over nose bridge
- Secure on head with elastic



How to Don a Particulate Respirator

- Adjust to fit
- Perform a fit check
 - Inhale – respirator should collapse
 - Exhale – check for leakage around face



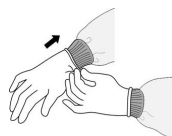
How to Don Eye and Face Protection

- Position goggles over eyes and secure to the head using the ear pieces or headband
- Position face shield over face and secure on brow with headband
- Adjust to fit comfortably



How to Don Gloves

- Don gloves last
- Select correct type and size
- Insert hands into gloves
- Extend gloves over isolation gown cuffs



How to Safely Use PPE

- Keep gloved hands away from face
- Avoid touching or adjusting other PPE
- Remove gloves if they become torn; perform hand hygiene before donning new gloves
- Limit surfaces and items touched

“Contaminated” and “Clean” Areas of PPE

- Contaminated – outside front
 - Areas of PPE that have or are likely to have been in contact with body sites, materials, or environmental surfaces where the infectious organism may reside

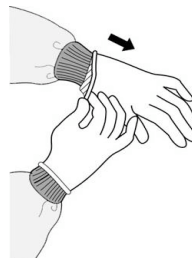
“Contaminated” and “Clean” Areas of PPE

- Clean – inside, outside back, ties on head and back
 - Areas of PPE that are not likely to have been in contact with the infectious organism

Sequence for Removing PPE

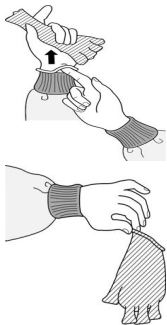
- Gloves
- Face shield or goggles
- Gown
- Mask or respirator

How to Remove Gloves (1)



- Grasp outside edge near wrist
- Peel away from hand, turning glove inside-out
- Hold in opposite gloved hand

How to Remove Gloves (2)



- Slide ungloved finger under the wrist of the remaining glove
- Peel off from inside, creating a bag for both gloves
- Discard

Remove Goggles or Face Shield



- Grasp ear or head pieces with ungloved hands
- Lift away from face



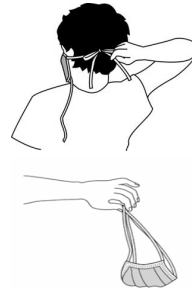
- Place in designated receptacle for reprocessing or disposal

Removing Isolation Gown



- Unfasten ties
- Peel gown away from neck and shoulder
- Turn contaminated outside toward the inside
- Fold or roll into a bundle
- Discard

Removing a Mask



- Untie the bottom, then top, tie
- Remove from face
- Discard

Removing a Particulate Respirator

- Lift the bottom elastic over your head first
- Then lift off the top elastic
- Discard



Hand Hygiene

- Perform hand hygiene immediately after removing PPE
 - If hands become visibly contaminated during PPE removal, wash hands before continuing to remove PPE

Hand Hygiene

- Wash hands with soap and water or use an alcohol-based hand rub
- Ensure that hand hygiene facilities are available at the point needed, e.g., sink or alcohol-based hand rub

Handwashing

How to Wash

- Use warm (not hot, nor cold) running water
- Lather soap in hand, then vigorously rub together
 - Wash all surfaces (palms, backs of hands, between fingers and wrist)
 - Around nail beds and under fingernails
 - Around and under any rings

Handwashing

- Most sources recommend a minimum of 10 – 15 seconds of friction
- Rinse well under running water to remove all soap
- Turn off water with a paper towel, discard, then dry hands

Hand Hygiene

- Hand hygiene steps:
 - Apply 3 – 5 ml. (5 ml. is a teaspoon) of alcohol – based waterless agent into hand
 - Vigorously rub hands (all surfaces) together until dry

Handwashing

- Soap:
 - Liquid soap is best
 - Bacteria can grow on bar soap, especially if it is resting in water. If stored in a drainable dish, may use, but rinse bar under running water before use. Do not carry bar soap from home to home

Handwashing

- Soap
 - Liquid soap containers may also become contaminated. Carry as small a container as possible. If you refill a container, be sure that the container is clean and dry.

Handwashing/Hand Hygiene

- When to wash:
 - Prior to any patient care activity
 - When handling food
 - Between tasks
 - After removal of gloves

Handwashing/Hand Hygiene

- After any activity that could contaminate your hands
 - Emptying trash
 - Sneezing
 - Touching hair
 - Changing diapers
 - Using toilet
 - Emptying vacuum

Handwashing/Hand Hygiene

- After any activity that could contaminate your hands
 - At the end of the visit, before doing any paperwork
 - WHEN IN DOUBT DECONTAMINATE.
- Use friction when drying hands with a clean unused paper towel. This also helps remove bacteria).

Hand Hygiene

- Waterless Alcohol Handwash Products:
 - First used only when soap and water were not available.
 - Now know they are more effective than soap and water.
 - Cause less skin irritation and dryness.

Hand Hygiene

- Waterless Alcohol Handwash Products:
 - Decreases the amount of time needed to decontaminate hands
 - Increases hand hygiene compliance
 - Alcohol is not a good cleaning agent and is not recommended in the presence of physical dirt or contamination with body fluids.

Handwashing/Hand Hygiene

- Frequent handwashing will strip the skin of natural oils and lead to dryness, cracking and irritation. This increases the risk of colonization and infection.
- Lotions and creams should be used with care.
- Fingernails should be kept short and any flaking or peeling polish should be removed.

Cleaning

- Patient care equipment:
 - all items must be cleaned first to remove any blood or body fluids before disinfecting
 - most non-critical items can be cleaned with a detergent.

Cleaning

- Disinfection products suitable for disinfection in the home:
 - Bleach
 - Hydrogen peroxide
 - Boiling water
 - Phenolics (e.g. Lysol, Pinesol)
 - Isopropyl alcohol (70%)

Cleaning

- Acetic acid (vinegar) is often used for disinfection, but since vinegar may not contain a standard concentration of acetic acid, it is not recommended.
- Vinegar is not effective against *Staphylococcus aureus*.

Cleaning

- Principles of cleaning, disinfecting and sterilization
- Clean all items thoroughly to remove any soil organic material.
- Read manufacturer's recommendations or departmental procedure.
- Leave disinfectant on items for the recommended contact time.

Cleaning

- Thoroughly rinse items and allow to dry (take care not to recontaminate).
- Rinse with fresh tap water or sterile water.
- Use appropriate PPE when cleaning and disinfecting items.
- Always store items properly.

Cleaning

- Waste Disposal:
 - Waste can be disposed with other home waste in correct containers.
 - Be familiar with pamphlet "Handling and Disposal of Home Medical Waste: a Household Guide for Alabamians"

Cleaning

- Medical waste is not transported from patient's home to home health office for disposal.
- Disposable supplies should be double bagged in plastic trash bags, securely fastened and placed with other household trash.

Cleaning

- Soiled linen and clothing can be safely laundered in the family washer using:
 - Detergent
 - Hot water (as hot as safe for material being washed)
 - Bleach (read washing instruction on clothing)
 - A dryer will also boost antibacterial activity

Cleaning

- Never hold clean nor soiled linen against your clothing.
- If soiled with fecal material, dispose in the toilet and wash separately.
- Keep off the floor and upholstered furniture.
- Never shake linen, clean or soiled.

Food

- Food Preparation:
 - Wash hands before and after food preparation.
 - Store cooked and uncooked foods separately.
 - Do not thaw and refreeze foods.
 - Persons with diarrhea should not assist with food preparation.

Food

- Dishes need no special treatment.
- Refrigerate leftovers.
- Keep all food prep areas clean.
- Do not use cracked eggs.
- Heat leftovers thoroughly.
- If in doubt throw it out!

Food

CDC Reports That 85% of ALL Foodborne Illness Is Preventable

Transmission

- Communicable diseases seen in the home:
 - Pinkeye (conjunctivitis)
 - Acute diarrhea
 - Fifth Disease
 - Lice
 - RSV
 - Ringworm of the scalp
 - Scabies

Transmission

- MDRO's
 - These are bacteria that have become resistant to the antibiotics that are normally used to treat infections they cause. Most common are:
 - MRSA (Methicillin Resistant Staphylococcus)
 - VRE (Vancomycin Resistant Enterococcus)
 - C. difficile

Transmission

- Transmitted in 2 ways:
 - Direct contact (skin to skin)
 - Indirect contact (exposure to contaminated environment or equipment)
- Protect yourself and your next patient by washing your hands and wearing the appropriate barriers (PPE's).

Transmission

- Risk factors for MDRO's:
 - Underlying chronic and/or immunosuppressive illness
 - Cancer
 - HIV
 - Transplant
 - Steroid therapy
 - Multiple health problems

Transmission

- Colonization versus Infection:
 - Colonization – bacteria is present, but is not causing infection.
 - Infection – Bacteria is causing an infection such as UTI, skin (spider bite, cellulitis), wounds, blood or other body site

Viral Hepatitis

- Signs and symptoms:
 - Jaundice
 - Dark urine
 - Pale colored stools (clay colored)
 - Flu-like symptoms
 - Pruritus (generalized itching)
 - Anorexia (loss of appetite)

Hepatitis B

- Transmission:
 - Sexual
 - Parenteral
 - Perinatal
 - Other

Hepatitis B

- Persons with chronic HBV infection are often asymptomatic.
- Approximately 15 – 25% of these may die prematurely from either cirrhosis or liver cancer.

Hepatitis B Vaccine

- Vaccine is a yeast product (not blood)
- 96% effective
- 3 dose series, given IM in the deltoid (arm)
 - (0, 3 and 6 month interval)

Hepatitis C “The Silent Epidemic”

- A major healthcare problem worldwide.
- Many people who are infected do not have symptoms for many years, but their blood and body fluids could be infectious to others.

Hepatitis C

- 50 million people worldwide; of these 4 million are in the U.S.
- 70-90% of those infected will develop chronic infection.
- Contributes to over 12,000 deaths annually.

Hepatitis C

- Transmission:
 - Injecting drugs
 - Sexually
 - Blood transfusions (prior to blood donation screening)
 - Perinatally (rare)
 - Household: sharing toothbrushes, razors, etc.
 - Other

Hepatitis C

- Treatment:
 - There is no vaccine at present for hepatitis C
 - There are some anti-viral medications available for treatment of some hepatitis C patients, but the treatment is usually only effective in 10-40% of those treated.

HIV/AIDS

- Routes of transmission are very similar to hepatitis B.
- AIDS is the last stage of an infection caused by the HIV virus.
- HIV weakens the immune system (the body's natural defense against illness).

HIV/AIDS

- Infection with HIV can last for years.
- By the AIDS stage the immune system is very weak and cannot protect against illness.
- There are good antiviral medications that can prolong life and boost the immune system.

2008 Respiratory Illnesses of Concern

- Seasonal Flu
- Avian Flu
- Pandemic Flu
- Pertussis in teenagers and adults
- RSV
- Meningitis

Seasonal Flu

- A respiratory illness that can be transmitted, easily, from person to person.
- Most people have some immunity and a very effective and safe vaccine is available.
- Everyone is strongly encouraged to get a yearly flu shot.

Avian Influenza

- Avian (bird) flu is caused by influenza viruses that occur naturally among wild birds. The H5N1 variant is deadly to domestic fowl (chickens, ducks, geese, etc).
- When it becomes easily transmitted to people and from person to person, a possible pandemic may emerge.
- There is no human immunity and vaccines are developed.

Pandemic Flu

- A virulent (strong) human flu that can cause a global or worldwide outbreak or pandemic of serious illness.
- Because there is little natural immunity, the disease can spread easily from person to person.
- There is no pandemic flu currently.

Pertussis

- Seeing more teenage/adult age cases.
- Most infectious during catarrhal (runny nose) stage.
- Incubation period is seven to ten days.

Pertussis

- **Transmission:**
 - Coughing or sneezing
 - Unclean hands
 - Inanimate objects

Respiratory Etiquette

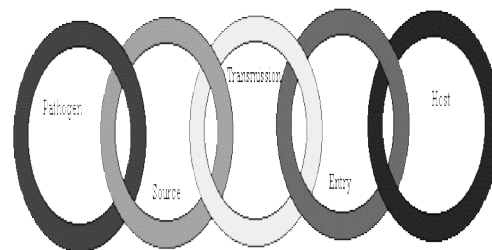
- **When cough or sneeze, cover nose and mouth with a tissue.**
- **Dispose in a waste basket.**
- **If you do not have a tissue, sneeze or cough into your sleeve.**
- **Avoid touching eyes, nose or mouth.**

Prevention

- **After coughing or sneezing, always clean your hands with soap and water or an alcohol based hand cleaner.**
- **Stay home when you are sick.**
- **Do not share eating utensils, drinking glasses, towels or other personal items.**

Chain of Infection

Links in the Chain of Infection



Upcoming Conferences and Programs

Workplace Diversity: Valuing Differences
Tuesday, September 23, 2008
3:00 - 4:00 p.m. (Central Time)

Saving The Teenage Driver
Tuesday, October 7, 2008
11:00 a.m. - 1:00 p.m. (Central Time)