

## **Infection Control Update**

**Satellite Conference and Live Webcast  
Wednesday, September 19, 2007  
2:00-4:00 p.m. (Central Time)**

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

## **Faculty**

**Sharon Thompson BSN, RN  
Director of Infection Control Branch  
Alabama Department of Public Health**

## **Program Objectives**

- Define hand hygiene and its importance in preventing the spread of disease
- List three products that may be used for disinfection in the home
- List two of the more common multi-drug resistant organisms
- Discuss the importance of personal protective equipment to the healthcare worker

## **IC Basics**

**What Makes Your Patients More  
Susceptible to Infection**

- Broken skin
- Small children in the house
- Poor personal hygiene
- Decreased defenses due to illness
- Home sanitation
- Questionable water supply and purity
- Care giver technique

**You can be a  
Teacher!  
You are an  
Example!!**

**Handwashing/hand Hygiene  
Is the 1<sup>st</sup> and Last Step in  
Preventing Infections**

## **Handwashing**

### **How to Wash**

- Use warm (not hot, or cold) running water
- Lather soap in hand, vigorously rub together
- Rub all surfaces, including palms, backs of hands, between fingers and wrist
- Clean around nail beds and under fingernails
- Clean 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 hands
- Then 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
- Storing in a drainable dish is acceptable, 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 of a container as possible
- If you refill a container, be sure that the container is clean and dry

## **Hand Hygiene**

- Antimicrobial soap and alcohol hand hygiene agents are used to kill or retard resident microorganisms in the deep epithelial skin layers

## **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 the trash
  - Sneezing
  - Touching hair
  - Changing a diaper
  - Using the toilet
  - Emptying a vacuum

## **Handwashing/Hand Hygiene**

- At the end of the visit, before doing any paperwork
- When in doubt, decontaminate!
- Also, use friction when drying hands with a clean unused paper towel
  - helps remove bacteria

## **Hand Hygiene**

### **Waterless Alcohol Handwashing 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**

- 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

## **PPE**

### **The Usage of Gloves**

- Use for any task involving a potential for contact with non-intact skin, mucous membranes and blood or body fluids
  - Except sweat
- If in doubt use gloves

## **PPE**

### **Change Gloves**

- If cracked or torn
- Between tasks and procedures on the same patient
  - don't wear the same gloves to brush teeth that were used to bathe the patient
- If a dirtier part of a task was completed before a cleaner part

## **PPE**

- After any contact with any material containing a high concentration of bacteria
  - Changing a diaper or cleaning up feces
- After any contact with patients that have MRSA or VRE
- Remove gloves as soon as possible after a task is completed to prevent cross contamination

## **PPE**

- Do not wash or reuse disposable, single use gloves
- Always wash hands after the gloves are removed
- Don't touch your face or adjust PPE with contaminated gloves
- Don't touch environmental surfaces except as necessary during patient care

## **PPE**

- Latex gloves are made from natural rubber
- Latex allergies
  - Skin rash
  - Hives
  - Flushing
  - Nasal, eye and sinus symptoms
- Not only your problem, but possibly your patients also

## **PPE**

- The apron worn over your uniform provides a basic barrier to protect you and also protect your patient  
Aprons should be worn with every patient
- Gowns should be worn during patient care activities when you anticipate your uniform may have contact with blood or body fluids

### **PPE**

- Wear mask and/or eye protection when there is a possibility of splashes or sprays to the facial area
- Masks/facial shields should protect the nose and mouth and prevent fluid penetration
- Goggles or safety glasses should fit snugly over and around eyes or eyeglasses
- Personal glasses are not a substitute for goggles

### **PPE**

- |           |            |
|-----------|------------|
| • Donning | • Removing |
| – Gown    | – Gloves   |
| – Mask    | – Goggles  |
| – Goggles | – Gown     |
| – Gloves  | – Mask     |

### **PPE**

#### **PPE Safe Work Practices – Always Remember to**

- Keep hands away from face
- Limit surfaces touched
- Change equipment when torn or heavily contaminated
- Perform hand hygiene immediately after removing all PPEs

### **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 re-contaminate
- 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!

**CDC Reports That  
85% of ALL  
Foodborne Illness Is  
Preventable**

## **General**

### **Pets**

- Man's best friend and a big comfort
- Pets can speed recovery
- Should not be in area when any treatments are being done
- Problems with reptiles

## **Transmission**

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

## **Transmission**

- MDRO's
  - The bacteria that has become resistant to the antibiotics that are normally used to treat infections they cause
    - The 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 wounds (spider bite, cellulitis), blood or other body site

## Isolation

### Standard Precautions

- All patients blood, body fluids, secretions, excretions, non-intact skin, and mucous membranes
  - Except sweat
- Contact Precautions:
  - Patients who are infected with MDRO's
  - Use when having direct contact

## Standard Precautions



## Viral Hepatitis

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



### **Hepatitis A**

- **Transmission**
  - Close personal contact – fecal/oral route
    - household, sexual, daycare
  - Contaminated food or water
    - infected food handler, raw seafood
  - Blood exposure
    - very rare

### **Hepatitis A**

- Present vaccine is 99% effective
- Two dose schedule given 6 months apart
- Recommended for children 2 years or older, homosexual and bisexual men, IV drug users and travelers to endemic countries

### **Hepatitis B**

- **Transmission**
  - Sexual
  - Parenteral
  - Perinatal
  - Other

### **Hepatitis B**

- Approximately 30 – 60% of young children and 2 – 10% of adults who are infected, will develop chronic disease
- 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

### **2007 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. There are also very effective and safe vaccines 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

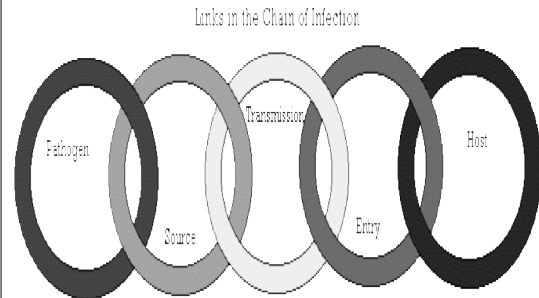
### **Respiratory Etiquette**

- 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



### Handwashing Infection Prevention



Lend Healthcare A Hand  
By Washing Yours™

### Upcoming Programs

**Working Towards Independence:  
Employment of Persons with Disabilities**  
Thursday September 20, 2007  
2:00-4:00 p.m. (Central Time)

**Workplace Violence:**  
ADPH Policies & Prevention  
September 28, 2007  
2:00-4:00 p.m. (Central Time)

### Upcoming Programs

**Short Term Interval:**  
Counseling Family Planning Patients  
Thursday, October 4, 2007  
2:00-4:00 p.m. (Central time)

**Patients Rights and Responsibilities**  
Wednesday, November 14, 2007  
2:00-4:00 p.m. (Central Time)