

Infection Control Update 2012

**Satellite Conference and Live Webcast
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Faculty

**Nadine Crawford, MSN, RN
Infection Control Officer
Alabama Department of Public Health**

Hand Washing

- **Hand washing / hand hygiene is the first and last step in preventing infections**

Hand Washing / Hand Hygiene

- **Methods:**
 - **Soap and warm water**
 - **Waterless alcohol-based hand washing products**

Hand Hygiene

- **Antimicrobial soap and alcohol-based hand hygiene agents are used to kill or retard the number of microorganisms on the skin**

Hand Washing

- **Soap (antimicrobial preferred):**
 - **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**

Hand Washing

- 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

Hand Hygiene

- Waterless alcohol hand washing products:
 - Use only when soap and water are not available
 - Contain 60 - 95% alcohol
 - Ethyl or isopropyl

Hand Hygiene

- Alcohol is an antiseptic agent that can be used to decontaminate hands that are not visibly soiled
- Cause less skin irritation and dryness
- Decreases amount of time needed to decontaminate hands

Hand Hygiene

- Tends to increase hand hygiene compliance
- Alcohol is not recommended in the presence of physical dirt, contamination with body fluids or exposure to spore-forming organisms (e.g. *C. difficile*), noroviruses

Antiseptic Agents

- Antiseptic agents are antimicrobial substances that are applied to the skin to reduce the number of microbial flora

Antiseptic Agents

- Examples of other antiseptic agents include:
 - Chlorine
 - Chlorhexidine
 - Hexachlorophene
 - Iodine
 - Quaternary ammonium compound
 - Triclosan

Hand Hygiene

- Using a waterless hand washing product:
 - Follow manufacturer's recommendations regarding the amount of alcohol – based waterless agent to use
 - A general rule - apply 5 ml. (1 teaspoon) into hand

Hand Hygiene

- Vigorously rub hands (all surfaces) together until dry

Hand Washing

- How to wash using soap and water:
 - Use warm (not hot, nor cold) running water
 - Lather soap in hand, then vigorously rub together:
 - All surfaces
 - Palms, backs of hands, between fingers, and wrists

Hand Washing

- Around nail beds and under fingernails
- Around and under any rings

Hand Washing

- Wash hands a minimum of 15 – 20 seconds using a rotary motion and friction
- Rinse well under running water to remove all soap
- Dry hands with a paper towel
- Use the paper towel to turn off faucet, then discard

Hand Washing / Hand Hygiene

- Indications for hand hygiene:
 - Prior to any patient care activity
 - When handling food
 - Between tasks
 - After removal of gloves

Hand Washing / Hand Hygiene

– After any activity that could contaminate your hands

- Emptying trash
- Sneezing
- Touching hair
- Changing diapers
- Using toilet
- Emptying vacuum

Hand Washing / Hand Hygiene

– 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
- Also helps remove bacteria

Hand Washing / Hand Hygiene

- Frequent hand washing can 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

Hand Washing / Hand Hygiene

- Fingernails should be kept short and any flaking or peeling polish should be removed
- Artificial fingernails or nail extenders are not recommended for use by direct care providers because they increase the risk of spreading infection

Personal Protective Equipment (PPE): 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

PPE

- After any contact with patients known to have multi-drug resistant bacteria
 - Methicillin / Oxacillin Resistant Staphylococcus Aureus (MRSA/ORSA) or Vancomycin Resistant Enterococcus (VRE)

PPE

- Remove gloves as soon as possible after a task is completed to prevent cross contamination
- Do not wash or reuse disposable, single use gloves
- Always wash hands after gloves are removed

PPE

- 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

PPE

- Latex gloves:
 - Not only your problem, but possibly your patients also

PPE: Aprons

- The apron worn over your uniform provides a basic barrier to protect you and also protect your patient
 - Wear apron when performing care activities that may result in uniform becoming soiled

PPE: Aprons

- 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

PPE

- Goggles or safety glasses should fit snugly over and around eyes or eyeglasses
- Personal glasses are not a substitute for goggles

PPE: Donning

1. Gown
2. Mask
3. Goggles
4. Gloves

PPE: Removing

1. Gloves
2. Goggles
3. Gown
4. 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**

Isolation

- **Standard precautions:**
 - **Once known as “universal precautions”**
 - **Means to treat all patients blood, body fluids, secretions, excretions, non-intact skin, and mucous membranes (except sweat) as if they were infectious material**

Isolation

- **Includes the use of hand hygiene, gloves, gown, mask, goggles or facial shield, depending on the anticipated exposure**

Isolation

- **Contact precautions:**
 - **Are used for diseases transmitted by contact with patient or the patient’s environment**
 - **Patients who are infected with MDRO’s, C. difficile, etc. wear gown and gloves**

Isolation

- **Droplet precautions:**
 - **Used to prevent the spread of diseases caused by large respiratory droplets that are produced by coughing, sneezing, or talking**

Isolation

- **Examples of diseases transmitted by droplet route include:**
 - **Influenza, mumps, bacterial meningitis (Neisseria meningitidis)**
- **Wear mask**

Isolation

- Handle items contaminated with respiratory secretions with gloves
 - e.g. tissues, handkerchiefs

Isolation

- Airborne precautions:
 - Used to prevent the spread of infectious organisms that remain suspended in the air and travel great distance
 - Examples include measles, smallpox, chickenpox, pulmonary tuberculosis, avian influenza

Isolation

- Wear a fit-tested National Institute for Occupational Safety and Health (NIOSH) approved N-95 or higher level respirator

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

Viral Hepatitis

- Currently 5 types exist: A, B, C, D and E
 - All can cause unapparent and acute inflammation of the liver
 - Infections with A and E usually resolve on their own
 - Infections with B, C, and D can lead to cirrhosis, liver failure, and cancer

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**
 - Fecal/oral route
 - Facilitated by:
 - Close personal contacts
 - Household, sexual, daycare
 - Poor hygiene, unsanitary conditions

Hepatitis A

- Contaminated water, milk or food
 - Especially raw seafood
- Occupation
 - Food handler, sewage worker, and pediatric nurse / physician
- Blood exposure (very rare)

Hepatitis A (HAV)

- **Laboratory diagnosis:**
 - Immunoglobulin M antibodies to HAV (IgM anti-HAV) are used to detect acute HAV (Hepatitis A) infection

Hepatitis A (HAV)

- Immunoglobulin G antibodies to HAV (IgG anti-HAV) appear during the convalescent phase of infection, and remain present in the serum for lifetime

Hepatitis A (HAV)

- The antibody test for total anti-HAV measures both IgM and IgG
 - Persons who are total anti-HAV positive, and IgM anti-HAV negative have immunity consistent with either past infection or vaccination

Hepatitis A (HAV)

- Persons who are total anti-HAV positive, and IgM anti-HAV positive have acute Hepatitis infection

Hepatitis A

- A vaccine preventable disease
 - Two dose schedule (given 6 months apart) intramuscular (IM) injection
- Recommended for children 2 years or older, homosexual and bisexual men, IV drug users, and travelers to endemic countries

Hepatitis B (HBV)

- Transmission
 - HBV is a blood-borne pathogen
 - Primarily transmitted from contact with contaminated body fluids – blood (highest concentration), saliva, and semen
 - No apparent transmission via sweat, urine, stool, or droplet

Hepatitis B (HBV)

- Sexual
- Parenteral – intravenous (IV)
- Perinatal – transmission from mother to infant at birth is very efficient
- Other

Hepatitis B (HBV) Interpretation of Serologic Test

- Immune due to vaccination
 - HBsAg – negative
 - Anti-HBc – negative
 - Anti-HBs – positive with > 10nIU/mL

Hepatitis B (HBV) Interpretation of Serologic Test

- Acutely infected
 - HBsAg – positive
 - Anti-HBc – positive
 - IgM anti-HBc – positive
 - Anti-HBs – negative

Hepatitis B (HBV) Interpretation of Serologic Test

- Immune due to natural infection
 - HBsAg – negative
 - Anti-HBc – positive
 - Anti-HBs – positive

Hepatitis B (HBV) Interpretation of Serologic Test

- Chronically infected
 - HBsAg – positive
 - Anti-HBc – positive
 - IgM anti-HBc – negative
 - Anti-HBs – negative

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

- Transmission:
 - Primarily transmitted parenterally by blood injection (injecting drug users), organ transplantation, or transfusion of HCV infected blood or blood products (clotting factors) and intravenous immunoglobulin
 - Sexually

Hepatitis C

- Blood transfusions
 - Prior to blood donation screening
- Perinatally (rare)
- Household: sharing toothbrushes, razors, etc.
- HCV is detectable in semen, saliva, urine, ascitic fluid

Hepatitis C (HCV)

- Treatment / prevention:
 - Currently, there is no vaccine to prevent Hepatitis C

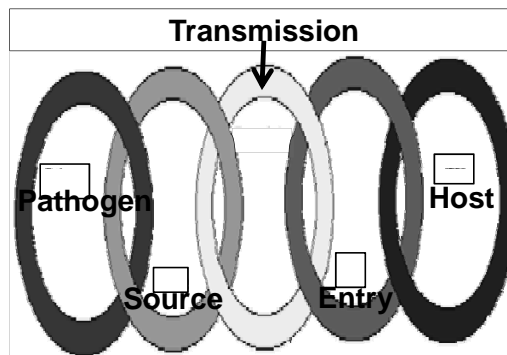
Hepatitis C (HCV)

- Treatment for HCV consist of providing supportive care
 - Encouraging abstinence from alcohol and hepatotoxic drugs are also important in the long-term management of HCV

Hepatitis C (HCV)

- Avoid HCV by modifying risky behaviors
 - HCV carriers should avoid sharing needles, razors, toothbrushes, and by using condoms with sexual partners
 - HCV carriers should avoid donating blood, organs, tissue, or semen

Chain of Infection



Infection Prevention



**Lend Healthcare A Hand
By Washing Yours™**