MRC Training 2009

Bloodborne Pathogens and Immunizations

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Standard Precautions

- CDC revised guidelines
- Combines Universal Precautions and Body Substance isolation
- Designed to reduce transmission of pathogens
- Standard Precautions apply to:
  - Blood
  - Body fluids (except sweat)
  - Non-intact skin
  - Mucous membranes

Bloodborne Pathogens

- Medical Reserve Corps should receive annual bloodborne pathogen training
- There are 3 bloodborne pathogens of concern:
  - Human immunodeficiency virus (HIV)
  - Hepatitis B virus (HBV)
  - Hepatitis C virus (HCV)

HIV

- Causes immune system to break down
- Immune system loses ability to fight infection
- Symptoms may vary (may take years to develop)
  - Weight loss
  - Night sweats
  - Fever
  - Diarrhea
  - Serious infections may develop
- No vaccine

HIV

- Occupational risk
  - Very small
  - Fragile virus
  - 57 reported cases in HCW in 2001
    (around 5 million HCW in U.S.)
  - No vaccine, anti-viral treatment available

Hepatitis B Virus (HBV)

- Can live in dried blood for up to 1 week
- Symptoms are same for all Hepatitis viruses
  - Jaundice
  - N/V
  - Loss of appetite
  - Abdominal pain
  - Fever

Hepatitis B

- About 50% do not experience symptoms
- Most people clear infection, 5% chronic
- Cause of 80% of liver cancers
- Risk of chronic infection decreases with age
- Vaccine preventable, there is PEP treatment

Hepatitis B

- Occupational Exposure
  - 100 times more infectious than HIV
  - Occupational exposure has decreased 95% since vaccine introduced
  - Less than 400 known occupational related infections in 2001

Hepatitis C Virus (HCV)

- Primarily spread by needle/sharps
- Not as hardy as HBV
- Leading cause of liver transplant in U.S.
- Symptoms may be mild, up to 80% thought to have no symptoms

Hepatitis C

- Occupational Exposure
  - No exact estimates on HCW infected from occupational exposure to HCV
  - Exposure greater if from needle stick
  - Risk of exposure from mucous membrane is believed to be small
  - No vaccine, no treatment

Transmission

- Contact with blood or other potentially infectious material
- Sharps injuries/needle sticks
- Broken skin
- Mucous membranes

Exposure Control Plan

- Safety measures
- Use of Standard Precautions
- Personal Protective Equipment
  - Gloves
  - Masks
  - Goggles/Visors
  - Gowns
- Engineering Controls
  - Needleless systems
  - Sharps containers
- Good Hand Hygiene

Exposure

- Don’t panic
- Wash exposed area with soap/water
- If exposed area is a mucus membrane, flush with water
- Report exposure
- Act quickly, seek treatment
- Remember “Exposure does not mean infection.”

Vaccine

- **Hepatitis B**
  - Three (3) doses or serological evidence of immunity are recommended.
- **MMR**
  - For persons born in 1957 or later, 2 doses of MMR are recommended. For persons born before 1957, one dose of MMR is recommended (should receive second dose during mumps outbreak). May also submit serologic evidence of immunity.
- **Varicella (chickenpox)**
  - For persons with no serologic proof of immunity, no prior vaccination, or no history of disease, two (2) doses of Varicella vaccine are recommended.
- **Tdap**
  - A Td booster dose is recommended every 10 years, following completion of the primary 3-dose series (usually received as child). A one-time dose of Tdap is recommended for all health care providers (HCP) younger than 65 years.
- **Influenza**
  - Recommended annually.

Vaccine

- Vaccine to consider
  - Hepatitis A
    - There is a low probability of exposure in the U.S. Consider a single dose of hepatitis A vaccine if you are: living or working in a shelter, providing medical care to survivors, are a first responder, or are handling food. Two doses provide lifetime immunity.

Vaccine

- Other Vaccines
  - **Meningococcal Vaccine**
    - One dose is recommended for microbiologists who are routinely exposed to isolates of *N. Meningitidis*. There is no expectation of increased risk of this disease among emergency responders; therefore, this vaccine is not recommended.
  - **Rabies Vaccine**
    - Persons who are exposed to potentially rabid animals should be evaluated and should receive immunizations as clinically appropriate. Rabies vaccine is not recommended for other health care workers.

Questions?