The dirty business of Infection Control

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Infection Control

What's the big deal?

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In The News…

- Two more "superbug" cases reported at area schools
  - Asbury Park Press
- MRSA case in Penns Grove
  - Bridgeton News
- At least 8 students in NJ diagnosed with MRSA
  - Asbury Park Press
- Concern at Canarsie school where infected student died
  - Newsday NY
- Killer bacteria outbreaks prompt call for action
  - USA Today
- School security guard in Newark has MRSA
  - Star Ledger
- Parents warned of infection
  - Asbury Park Press

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In The News

- Swine Flu could hit 40% of US
  - Associated Press
- H1N1 Swine Flu virus more dangerous than expected
  - H1N1news.com
- Screenings for staph are now the law
  - Chicago Tribune
- Two more "superbug" cases reported at area schools
  - Asbury Park Press
- When MRSA gets personal
  - ABC News
- Concern at Canarsie school where infected student died
  - Newsday NY
- Killer bacteria outbreaks prompt call for action
  - USA Today

MONOC Mobile
Health Services

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Not just the flu

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Home & Life Family & Education Careers Health & Fitness Household Pets Vid

MRSA found on 80 percent of dollar bills according to SPC study

MRSA | SEPTEMBER 24, 2012 | BY: ROBERT HERRIMAN | Subscribe

The St. Petersburg College study revealed that 80 percent of the cash tested had MRSA on it
Credits: Chou Prince Cam

Internet 100%

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Yesterday

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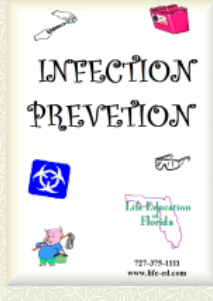
How do we prevent exposures

Exposure Control Plan

- Required by the OSHA Bloodborne Pathogen Standard 29 CFR 1910.1030
- PEOSH
- Designed to eliminate or minimize employee exposures
- Must be customized for individual needs



Methods of Compliance

- All body fluids shall be considered potentially infectious
- Use PPE to prevent contact with blood or other potentially infectious materials

Engineering & Work Practice Controls

Controls should be used to eliminate or minimize exposures

- Hand washing
- Handling and transporting of waste and linens
- Needle/Sharp Management
- Safer Medical Devices
- Mucous Membrane Exposure Prevention
- Transporting Specimens
- Equipment Servicing and Maintenance

High Percentage of Contamination Found in "Cleaned" Trauma Equipment

By J. M. Hendry

MERGNET—A study conducted in the United Kingdom illustrates the need to thoroughly clean and decontaminate ambulance equipment used in trauma situations, and to assess decontamination techniques to insure their effectiveness.

- Researchers tested extrication boards, cervical collars, straps/buckles, box splints, head blocks and head boards used by three regional ambulance services and six emergency departments over a two-week period to determine the presence of blood on equipment left as ready for patient use. The investigators visibly inspected equipment for blood, but also tested for blood contamination using a forensic technique—the Kastle-Meyer technique which is very specific for blood, is not toxic to tested surfaces, and is used by UK police to identify blood at crime scenes.
- After testing equipment surfaces most likely to come in contact with patients' skin surfaces, such as the medial side of head blocks, the inner side of head straps, the patient side of straps, buckles and extrication boards, and the back and chin areas of cervical collars, the researchers found the Kastle-Meyer test identified blood contamination on 42 percent of the equipment not visibly contaminated. An additional 15 percent of the equipment had visible blood contamination that researchers confirmed as blood through testing.
- Overall, 57 percent of the equipment tested in this two-week period remained contaminated despite being identified as ready for reuse, the study authors noted.
- When the investigators assessed their findings according to who did the clean[illegible]cleaned by ambulance personnel was only slightly less contaminated—42 percent—than that cleaned by hospital staff—52 percent.
- "The practice of washing heavily contaminated equipment by hosing with cold [illegible]aminated areas with alcohol impregnated wipes," the authors wrote.
- However they added that cold water may not remove lipid viruses such as Hep[illegible]ipes may require a five-minute contact period with the surface area to kill most bacteria[illegible]es high level chemical disinfection for potentially contaminated surfaces or using disp[illegible]
- While the authors noted no recorded cases of infection from contaminated tra[illegible]ion from such equipment. They remind that, under ideal conditions, the Hepatitis B virus
- The high percentage of contaminated equipment identified by this study highlights the need for all EMS providers to reassess not only their decontamination practices but their rationale for reusing any blood-contaminated trauma equipment.
- The citation for the actual study is: Lee, J B, Levy, M, Walker, A. "Use of a forensic technique to identify blood contamination of emergency department and ambulance trauma equipment." *Emergency Medic*

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Housekeeping

The worksite is to be maintained in a clean and sanitary condition

- Routine cleaning and disinfecting
- Spill clean up
- Laundry
- Waste management

Vaccination programs

The hepatitis B vaccine and vaccination series must be made available to all employees who have occupational exposure

- No cost to employee
- Available upon employment at a reasonable time and place
- Those declining must sign declination statement

Tracking exposures

- Logs
- Call outs
- Worker Comp cases

Sharps management

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It should be kept in the med box

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Other notes

- Do not put non-sharps in the sharps container
- Make sure the angio-caths lock after you start the IV – this is where <u>all</u> of our accidental needle sticks have occurred
- Non-needled syringes go in the red bags
- IV tubing and saline locks can go in regular garbage bags
- Bristo jets go in the large sharps containers

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If you have a needle stick:

- Properly dispose of the sharp
- Cleanse the area with an alcohol prep immediately
- Wash the area with soap and water as soon as possible
- Report it to Management immediately
- The Infection Control Officer should be notified

Injury Log

An employer must establish and maintain an injury log for 5 years

- Type and brand of device (if a sharp)
- Where injury occurred
- Explanation of how the incident occurred

Personal Protective Equipment (PPE)

OSHA Definition:

"specialized clothing or equipment worn by an employee for protection against infectious materials"

Types of PPE

- Gloves – protect hands
- Gowns/aprons – protect skin and/or clothing
- Masks and respirators
  - Masks - protect mouth/nose
  - Respirators – protect respiratory tract from airborne infectious agents
- Goggles – protect eyes
- Face shields – protect face, mouth, nose, and eyes

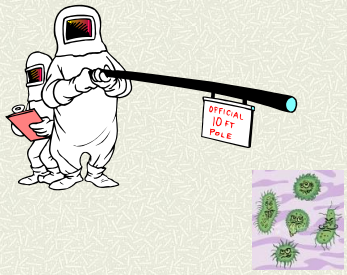
Factors Influencing PPE Selection

- Type of exposure anticipated
  - Splash/spray versus touch
  - Category of isolation precautions
- Durability and appropriateness for the task
- Fit
- Comfort
- Looks

The gowns

- Should be located in the ambulance in adequate numbers and sizes
- Needs to be check at the beginning of your shift

Limitations of PPE



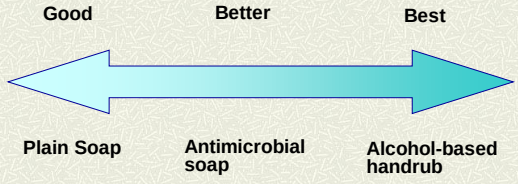
Vectors

- **Healthcare workers can get 100s to 1000s of bacteria on their hands by doing simple tasks like:**
  - Positioning patients
  - Taking a blood pressure
  - Touching a patient's hand
  - Touching the patient's sheets or blanket
  - Touching equipment like the stretcher, oxygen tubing, etc.

Most common mode of transmission of pathogens is via hands!

Culture plate showing growth of bacteria 24 hours after a nurse placed her hand on the plate

Efficacy of Hand Hygiene Preparations in Killing Bacteria



How to Wash Your Hands

According to the CDC:

- Wet your hands and apply liquid, bar, or powder soap
- Rub hands together vigorously to make a lather and scrub all surfaces
- Continue for 20 seconds! It takes that long for the soap and scrubbing action to dislodge and remove stubborn germs. Need a timer? Imagine singing "Happy Birthday" all the way through – twice!
- Rinse hands well under running water
- Dry your hands using a paper towel or air dryer
- If possible, use your paper towel to turn off the faucet

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

Face Protection

- Masks – protect nose and mouth
  - Should fully cover nose and mouth and prevent fluid penetration
- Goggles – protect eyes
  - Should fit snuggly over and around eyes
  - Personal glasses not a substitute for goggles
  - Antifog feature improves clarity
- Face shields – protect face, nose, mouth, and eyes
  - Should cover forehead, extend below chin and wrap around side of face

N-95 Masks…

- Protects user from airborne pathogens like Tuberculosis, SARS, Chickenpox, Measles and Smallpox.
- N-95 disposable particulate respirators are the minimum level of protection needed for airborne infectious agents.

DHSS Memo to the EMS Community

"N-95 respirators should be worn when responding to patients with unknown, potentially infectious respiratory or influenza-like illness…….and…. when caring for patients with diagnosed infectious illnesses such as tuberculosis……..

Properly fitted, N-95 respirators should protect the worker against bioterrorism and non-bioterrorism related respiratory pathogens."

Eddy Bresnitz, MD, MS, Deputy Commissioner/State Epidemiologist

Respiratory protection is only effective if:

- The correct respirator is used
- It's available when you need it
- You know when and how to put in on and take it off
- You have stored it and kept in in working order in accordance with the manufacturer's instructions

Resp protection requirements

- Must be available in proper size & quanitity
- Must be fit tested annually
- Options given if masks don't fit
- Must be used when needed

Red Bag stuff

What goes in it?

A word on PPE

- Per OSHA / PEOSH
  - If you expect to be exposed to blood or other bodily fluid – you must wear a gown
  - In the event you get your uniform contaminated
    - Change into your spare uniform
    - Place the dirty uniform in a red bag
    - Contact a Manager

When an Exposure is NOT an Exposure

- Clear cut non-exposures
  - Blood on gloves or clothing
  - Blood exposure to intact skin
  - Touching an infected person
  - Being in the same room as infected person
- If in doubt….report it

What to do if there is an exposure???

Mobile Hospitals

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Clean your ambulance?

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Just clean up after yourself

QUESTIONS ?