The dirty business of
Infection Control

Infection Control

What’s the big deal?

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
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

Not just the flu
How do we prevent exposures

- Exposed to bloodborne pathogens

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

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 ensure 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.
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

It should be kept in the med box

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 all of our accidental needle sticks have occurred
- Non-needed 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
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

Good  Better  Best

Plain Soap  Antimicrobial soap  Alcohol-based handrub

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 snugly 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 it on and take it off
- You have stored it and kept it in working order in accordance with the manufacturer’s instructions

Resp protection requirements

- Must be available in proper size & quantity
- 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
Clean your ambulance?
Just clean up after yourself

QUESTIONS?