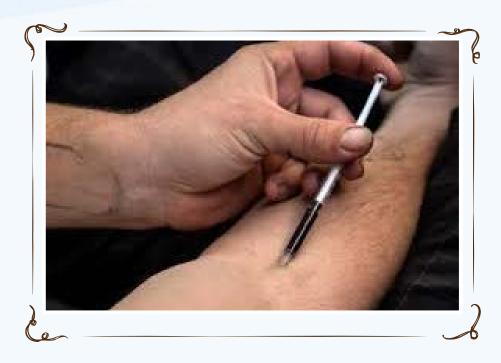


Importance of knowing about infection control



Hey are you not worried about contracting AIDS from IV drug use?



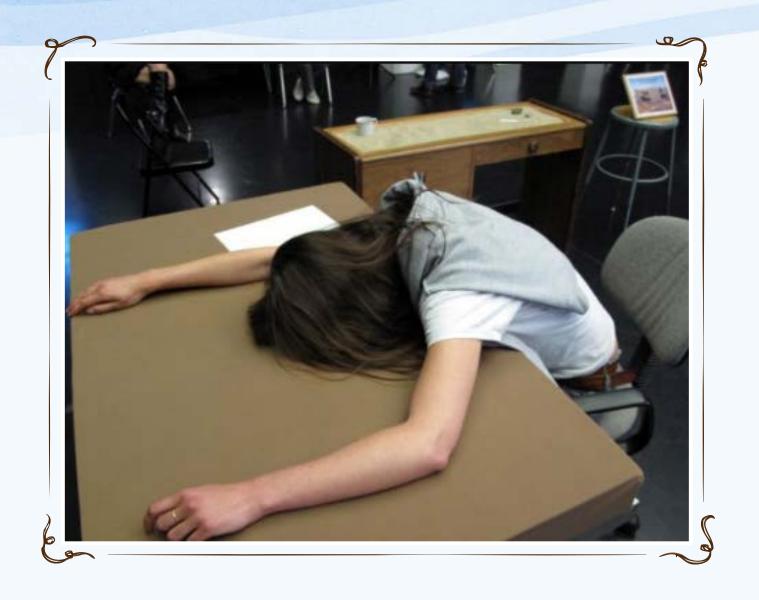
No! - I am wearing a condom

Why it is important?

- Need to protect ourselves from contracting infection from patients
- Need to prevent the spread of infections in daycare and schools
- Avoid unnecessary exclusion of children from daycare and schools
- · Can advise parents on when to return to school or daycare

Disclosures

- Andres Ramgoolam, MD, FAAP.
- Pediatrician At Piedmont Pediatrics
- Affiliated with Cone Health Medical Group
- · Affiliated with Triad Health Network
- No other affiliations



Mid Morning Nap

Wake up questions

- A 3 month old is admitted with RSV-what isolation precautions are required:
- A. Standard
- B. Standard and Respiratory
- C. Standard and Contact
- D. Standard and Airborne

- Standard Precautions requires all of the following except:
- A. Hand Hygiene
- B. Gloves
- C. Negative pressure room
- D. Masks, eye protection, face shields

- A patient is diagnosed with Strep pharyngitis, when can he return to school:
- A. After the duration of illness
- B. 24 hours after adequate antibiotic coverage
- C. Until afebrile
- D. Once they are feeling better

- You sustain a needle stick injury while taking blood from a hospitalized patient, your infection risk is:
- A. Hepatitis B = 3%, Hepatitis C=30%, HIV=0.3%
- B. Hepatitis B =0.3%, Hepatitis C=3%, HIV=30%
- C. Hepatitis B = 30%, Hepatitis C=0.3%, HIV=3%

- Which of the following requires Droplet isolation precautions:
- A. Measles
- B. RSV
- C. Influenza A
- D. Tuberculosis

- A patient admitted with widespread varicella infection should have in addition to Standard Precautions:
- A. Droplet isolation
- B. Airborne
- C. Contact isolation

- A school-aged boy is diagnosed with impetigo, he is treated with topical and oral antibiotics. He can return to school:
- A. After lesions has healed
- B. 24 hours after and lesions covered
- C. 1 week after treatment
- D. Right away if lesions are covered

- The influenza virus can remain viable on a solid surface for:
- A. 1 hour
- B. 8 hours
- C. 24 hours
- D. 1 week

- Hepatitis B virus can remain viable on a solid surface for:
- A. 1 day
- B. 5 days
- C. 7 days
- D. 10 days

- A child with which one of the following should NOT be excluded from daycare:
- A. Influenza A
- B. HIV
- C. Strep Pharyngitis
- D. Hepatitis A

Infection Control and Prevention in Hospitalized Patients

- Health Care Associated infections (HAI) cause substantial mortality and morbidity
- Need to have guidelines for preventing HAIs
- Development of Standard and Transmission based isolation precautions
- No longer use terms like enteric/respiratory/ or universal precautions

Isolation Precautions

- Standard Precautions
- Transmission based precautions
- a. Airborne
- b. Droplet
- c. Contact



Cap

Mask

Gown

Gloves

- Replaces "Universal Precautions"
- Obvious use of techniques and barriers to prevent transmission of ALL agents through contact with body fluids (except sweat), non intact skin, or mucous membranes....gloves, gowns, masks, goggles may apply
- All other guidelines are in ADDITION to Standard Precautions

- Hand Hygiene
- PPE (personal protection equipment)—gloves, gowns, masks, eye protection—used as barriers when encountering infectious body fluids
- Safe management of soiled patient care equipment
- Routine environmental cleaning with focus on high touch surfaces

- Linen processed in a manner to minimize transmission
- Safe injection practices-safety devices, no recapping
- Availability of resuscitation mouthpieces

- Needle stick injuries
- · Risk of Hepatitis B, hepatitis C and HIV
- Hepatitis B-30%
- HIV-3%
- Hepatitis C-0.3%

Viability on Hard Surfaces

- Hepatitis B-7 days
- HIV-6 days
- Hepatitis C-3 weeks
- Group A strep-several hours
- MRSA-2 to 6 months
- RSV-6 hours
- Flu—24 hours

- MMR-2 hours
- VZV-15 minutes
- Rotavirus 4 hours
- TB-6 months-if no sunlight
- Meningococcus-1-2 hours
- Pneumococcus-several hours
- Pertussis-2-3 days

Transmission Based Precautions

- ALWAYS in addition to Standard Precautions
- For known infections or colonization with pathogens for which additional precautions are required to interrupt transmission
- 1. Airborne
- 2. Droplet
- 3. Contact

Airborne Precautions

- MTV-measles/TB/Varicella
- Private room with negative air-no recirculation of exhaust
- Particle residue < 5 microns-remain suspended for long periods
- Dispersed by air currents
- Respiratory protection with N-95 masks esp. TB/measles
- Known immunity for measles and varicella

Droplet Precautions

- Relatively large droplets that do remain suspended in air and travel at most 3-6 feet
- Single room preferred or >3-6 feet separation
- Mask (with eye protection) when potential for exposure to respiratory droplets-cough/sneeze
- N95 for selected pathogens-SARS/FLU

Droplet Pathogens

- Viruses-SARS, flu, pertussis, mumps, rubella, mycoplasma, parvovirus, adenovirus, rhinovirus, Ebola
- Bacteria-H. influenza, Pneumococcus, Meningococcus, Strep, Diphtheria (pharyngeal) and Plague.
- Adequate treatment can decrease transmission decrease duration of droplet isolation

Contact Precautions

- Private room preferred but can cohort patients
- Gloves at all times—hand hygiene after removal
- Gowns upon room entry-remove prior to leaving

Contact Pathogens

- Multi drug resistant bacteria-VRE, MRSA, Gm neg resistant
- GI-C. difficile, E. coli, Rota, Salmonella, Shigella, Enterovirus
- Skin—Diphtheria (cutaneous), Impetigo, Abscess, Lice,
 Scabies, S. aureus
- Viruses-Conjunctivitis, Hepatitis A, HSV, Zoster, RSV, Parainfluenza

Transmission Based Precautions

category	Single patient room	masks	gowns	gloves
Airborne	YES-with negative pressure	N-95 or higher	No	No
Droplet	yes	Surgical masks	No	No
contact	yes	No	Yes	Yes



School and daycare

Infection Control

Infection Prevention in Daycare/schools

- Commonly spread:
- -Gastroenteritis
- Respiratory illnesses
- --Skin infections

Factors to decrease transmission

- Procedures and Standards
- -Hand hygiene, personal hygiene, clean food preparation and handling, toilet use/training, diaper changing techniques, strict environmental sanitation, special handling of pet visitation
- Records and Reporting
- -review care providers immunization status for flu and Tdap
- -communicable disease surveillance and reporting

Vaccine policies

• Children

Required for entry

Need to be kept up to date

Yearly review

Include all recommended vaccines plus flu

• Care providers

Recommend MMR/Hep B

Varicella immunity or vaccine

Annual flu

Tdap once

Yearly review

Interrupt transmission

- Hand hygiene
- Exclude ill with specific diseases
- Cohorting-segregation
- · Close facility if in an outbreak
- Antimicrobial treatment and prophylaxis
- Immunization

NO exclusion needed

- · Common cold
- · Contained diarrhea
- Rash without fever or behavior change
- Parvovirus B 19 in immunocompetent child
- CMV, Hep B, HIV, MRSA colonization
- Conjunctivitis without fever

Exclusion—general recommendations

Illness-preventing participation or need extra care	Exclusion until can participate or condition improved
Symptoms-	
Abdominal pain >2 hours or fever	Medical evaluation and exclusion until resolved
Vomiting>2 times in 24 hours	Exclusion until resolved and hydrated
Diarrhea not contained or with blood	Medical evaluation and exclusion until resolved
Lesions	
oral	Exclude if unable to contain drool
skin	Return if can keep lesions covered with waterproof dressing

Disease Specific EXCLUSION recommendations-Enteric

- C. difficile-until diarrhea resolves
- · Hepatitis A-until one week after onset of illness
- Salmonella-until diarrhea resolves
- E. coli o157:H7-until diarrhea resolves and two negative stool cultures
- Shigella-exclude 24 hours after diarrhea resolves and documented negative culture

Disease Specific EXCLUSION recommendations-respiratory

- Pertussis-until completion of 5 days of antibiotics-if untreated then exclude X 21 days
- Active TB-to be determined by health department
- Measles-until 4 days after rash onset and well
- Mumps-until 5 days after parotid gland swelling
- Rubella-until 7 days after onset of rash

Disease Specific EXCLUSION recommendations-respiratory

- Influenza-fever free for 24hours
- Group A strep pharyngitis-24 hours after treatment-recent study shows if first dose given by 5pm they can return to school the next day

Disease Specific EXCLUSION recommendations-skin

- Impetigo-until 24 hours after treatment and lesions covered with waterproof dressing
- Head lice-treated overnight and return 24 hours after end of treatment
- Varicella-until lesions crusted over—usually 5 -24 hour periods after onset
- Scabies-until after treatment given
- Staph aureus-only if lesions draining and cannot be covered

CMV

- Risk for pregnant caregivers
- · Children in childcare likely to acquire CMV and transmit
- Excretion rate in urine and saliva in children 1-3 years-range from 30-40%, can be as high as 70%
- CMV negative women at risk for infection
- Not cost effective to screen children
- Pregnant child care staff should be aware of risk and adhere to Standard precautions and hand hygiene

Herpes Simplex virus

- Children with primary HSV gingivostomatitis without control of secretions should be excluded from school/daycare
- · Children with cold sores SHOULD NOT be excluded
- Very low risk to pregnant caregivers

Answers

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