



Infection Control and Prevention

Hospital, Schools and Daycare

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

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- *No other affiliations*



Mid Morning Nap

Wake up questions

Question 1

- 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

Question 2

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

Question 3

- 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

Question 4

- 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%

Question 5

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

Question 6

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

Question 7

- 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

Question 8

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

Question 9

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

Question 10

- 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*



Standard Precautions

Cap

Mask

Gown

Gloves

Standard Precautions

- 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

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*

Standard Precautions

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

Standard Precautions

- *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

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



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
<i>Symptoms—</i>	
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
<i>Lesions</i>	
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* 0157: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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