Infection Prevention and Control in Schools

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Learning Objectives

✓ Apply effective infection prevention practices in school settings
  
  – Maintain clean environment safe and conducive to learning
  
  – Effectively contain infective organism spread leading to infection exposure
  
  – Maximize cooperation from students, teachers and other school staff to prevent infection transmission
Schools can be instrumental in keeping their communities healthy

Resource: CDC, 2011
Each school year:

✓ 40% of children miss at least 3 days due to infection
✓ 22 million school days are lost due to common cold
✓ 38 million school days are lost due to influenza

Resource: CDC, 2011
How does your school meet the following challenges to prevent infection transmission?
How does your school stay **clean**?
How does your school help others cooperate with infection prevention strategies?
How are infectious secretions contained?
How does your school prevent infections when people are in close contact with each other?
How does shared equipment increase the risk of infection transmission?
Quick Review

What is necessary for an infection to occur?
Chain of Infection

- Infectious Agent
- Reservoir Host
- Portal of Entry
- Portal of Exit
- Mode of Transmission
- Susceptible Host
Who gets infections?
(Susceptible Host)
Host Susceptibility

Dependent upon:

✓ **genetic factors**
  - gender
  - DNA

✓ **general actors of infection protection**
  - skin and mucous membranes
  - gastric acid
  - cilia in the respiratory tract
What increases your susceptibility to infection?

 ✓ Depressed immune response
 ✓ Co-morbidities
 ✓ Malnutrition
 ✓ Antibiotic usage
 ✓ Invasive devices
 ✓ Stress
What decreases your susceptibility to infection?
Acquiring protective antibodies through infection (active acquired immunity)
Vaccination
(active acquired immunity)
Administration of immune globulin or antitoxin (passive acquired immunity)
Transplacental transfer of maternal antibodies (passive acquired immunity)
What about the germs?
Microscopic organisms are everywhere
Usually, microorganisms included in our “normal flora” protect us from invasion of other microorganisms
Sometimes our own flora can give us an infection
What are the causative agents?
Bacteria
Viruses
Fungi, yeasts & molds
Protozoa, usually vector-borne as in West Nile virus
Ectoparasites, causing lice, scabies, flea infestations, etc.
What about multi-drug resistant organisms?
How do infectious agents “travel” to the next susceptible person? (Mode of Transmission)
Droplet transmission
Airborne transmission
Contact transmission
Where do infectious agents “hide”? (Reservoir)
Reservoirs

- humans
- animals
- environment
Human Reservoirs

- acutely infected person
- carrier
- colonized person
DID YOU KNOW THERE ARE MORE MICROSCOPIC BUGS LIVING ON YOUR BODY, THAN THERE ARE PEOPLE ON EARTH.

YUCK!

DID YOU KNOW THAT THE GROUND WE ARE STANDING ON IS MADE OF LIVING TISSUE.

YUCK!
How do infectious agents “get in and out” of us?

(Portals of Entry & Exit)
Respiratory tract
Alimentary tract
Skin
How can infections be prevented in school settings?
Break the chain of infection

✓ clean
✓ contain
✓ cooperate
Hand hygiene
Clean & disinfect

✓ Frequently touched surfaces
  – Door knobs
  – Diaper changing tables
  – Cabinet handles

✓ Equipment
  – Lifts
  – Wheelchairs
  – Mats
  – Slings
You can’t disinfect dirt....
One-wipe, one-application
Contain organism spread by vaccination of susceptible persons
Use personal protective equipment (PPE)
Exclude students according to school district criteria
Maximize cooperation

✓ Communicate
✓ Educate
✓ Monitor compliance
Infection risks in schools can be effectively decreased by:

✓ Maintaining a clean environment
✓ Containing infective organisms
✓ Maximizing cooperation
References

• CDC (2013). Information and Advice about MRSA for School and Daycare Officials.
• CDC (2011). Infectious Diseases at School.
Helpful Resources
