The Importance of Hand Hygiene in Schools

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Hand Hygiene: What’s the Big Deal?

- Infectious diseases account for millions of lost days of school and work each year
- Schools are congregate settings that provide an ideal environment for disease transmission
- *Most infections can be prevented with proper hand hygiene*

Source: Established 2003. The information contained in this Web site was compiled by the Centers for Disease Control and Prevention, U.S. Department of Health and Human Services and The Soap and Detergent Association. This information is not copyrighted. It is for educational purposes only.
Historical Perspective on Hand Hygiene & Cleanliness

Selected examples of the impact of HH and cleanliness on disease prevention and control:

• Ignaz Semmelweis (1818-65)
• Florence Nightingale (1820-1910)
Improved Patient Outcomes associated with Proper Hand Hygiene

Ignaz Philipp Semmelweis (1818-65)

Chlorinated lime hand antisepsis
Hand Hygiene: Not a New Concept

Maternal Mortality due to Postpartum Infection

General Hospital, Vienna, Austria, 1841-1850

Hand antisepsis reduces the frequency of patient infections

Florence Nightingale (1820-1910)

- Crimean War: 1853-1856
  - 97,864 British soldiers deployed
  - 4,602 died of war wounds or were killed in action
  - 17,225 died of infection
- 1854: Florence Nightingale & her 38 nurses arrived
- Hygiene, cleanliness, fresh air, and good food for the wounded soldiers.

Decline in Mortality Due to Infections: 1855

[CID 2005:40 (15 June) Gill & Gill].
Impact of Illness in Schools

- Estimated that nearly 22 million school days are lost annually due to the common cold alone.
- Diarrhea is second only to the common cold as a cause of lost working time.
- Teacher illness costs time and money.
- Teacher and student absences can have negative effects on student learning.

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The Problem: GERMS

Some Common Culprits:

• **Bacterial**
  - *E. coli* O157
  - Salmonella
  - Shigella
  - Streptococci (GAS)
  - Staphylococci (MRSA)

• **Parasitic**
  - Cryptosporididia
  - Giardia

• **Viral**
  - Hepatitis A
  - Norovirus
  - Rotavirus
  - Influenza (FLU)
Survival & Spread of Germs

• Many foodborne illnesses are spread through lack of hand hygiene.
• Respiratory infections (influenza) also spread via poor hand hygiene.
• Certain strains of bacteria can live on surfaces like cafeteria tables and doorknobs for up to two hours (i.e. E. coli, Salmonella).
• Rotavirus (causes GI illness) can survive up to 20 minutes after a surface has been contaminated.
• Noroviruses can survive in the environment for weeks.

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Chain of Infection
Microbe Transmission

There are three ways that microbes are transmitted from person to person:

• Droplets
• Airborne Droplet Nuclei
• Contact (direct and indirect)

*Some microbes, in some circumstances, may spread in more than one way*
Mode of Transmission: Droplets
Mode of Transmission: Direct Contact
Mode of Transmission: Indirect Contact
Mode of Transmission: Airborne
Interrupting the Chain: Hand and Respiratory Hygiene

- Wash hands well and often
- Cover Coughs and Sneezes
Hand Hygiene: Helps Control Illness

• Study involving Detroit school children showed that scheduled handwashing (4x per day) can reduce GI illness and related absences by more than 50%\(^1\).

• Case-control study of 6,080 students showed that classrooms using hand sanitizers in addition to normal hand cleaning experienced 20% fewer absences due to illness\(^2\).

\(^2\)Statistics reported by the Centers for Disease Control & Prevention

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Hand Hygiene: Education Does Have Impact

• Recent study showed that even a short (15 min) education for kindergarten children resulted in significantly improved fingernail cleanliness (13.2%) when the kids were evaluated 4 weeks later.

If kids think someone’s watching: they’re more likely to wash hands

- Video cameras placed over sinks in 4 schools
- HH rates 1.3 times higher at schools with video monitors than those without
- Girls cleaned hands 4% more often than boys
- 48% cleaned hands when alone, compared to 71% when at least 1 other student present

Research findings suggest ways to improve hand hygiene rates among students

- Provide hand cleaning supplies in public washrooms
- Schedule specific times for bathroom breaks between classes
- Create student clubs to demonstrate and promote HH to classmates
- Select certain students to be HH “champions”

Key Messages for Students

Germs

- Germs are everywhere.
- We can’t see them.
- Germs can make you sick.

Hand Hygiene

- What it is
- Why it is important
- When to do it
- How to do it effectively
Hand Hygiene

• Hand Hygiene includes:
  – Handwashing with soap & water
  – Using waterless hand hygiene products (alcohol-based rubs)

• It remains the most critical and effective infection control measure we have!
Hand Hygiene: When Is It Needed?

BEFORE:
• Touching food
• Eating meals and snacks
• Touching mucous membranes (eyes, nose, mouth)
• Contact with small children
Hand Hygiene: When Is It Needed?

AFTER:

• Using bathroom or helping a child use bathroom [use soap & water]
• Wiping your nose or a child’s nose
• Coughing or sneezing
• Touching pets
• Being around someone who is sick
• Coming in from outside
Hand Rubs: Recommended Technique

(1) Apply to palm of one hand

(2) Rub hands together covering all surfaces and allow to dry without wiping

Q: How much to use? A: About the size of a dime

Q: What is the concentration of alcohol? A: ≥ 60%

Q: Will it cause dryness of my hands? A: No -- contains emollients (moisturizers).

Q: Is it safe for use by toddlers? A: Yes -- with adult supervision.

Note: Use caution on hands with cracks, cuts or scrapes --- it will sting!
When must you use **Soap & Water** to clean your hands?

- After using the restroom (**always** -- no exceptions)
- Whenever hands are visibly soiled

Q: Can I use liquid or bar soap?  **A:** Liquid soap only in public settings.

Q: Is antiseptic soap necessary?  **A:** No

Q: Is warm water necessary?  **A:** Yes

Q: Is sink size/height important?  **A:** Yes

Q: Hand dryers versus paper towels?
Useful Websites

- Henry the Hand: http://www.henrythehand.com/
- Scrub Club: http://www.scrubclub.org/home.aspx
- It’s A SNAP: School Network for Absenteeism Prevention: http://www.itsasnap.org/index.asp
- Fight BAC!: http://www.fightbac.org/
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