

How do germs spread?

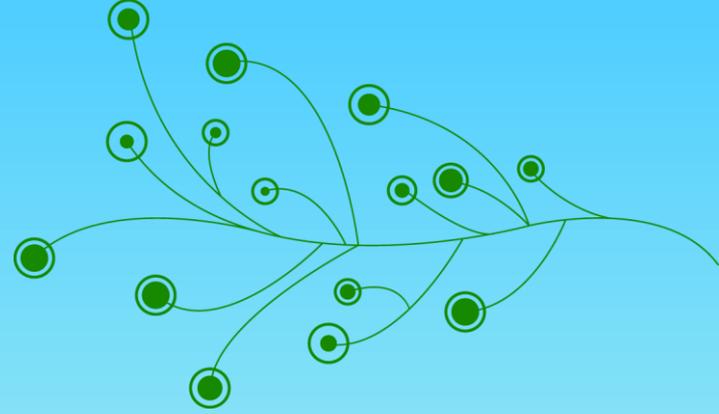


Germs

An Environmental Approach

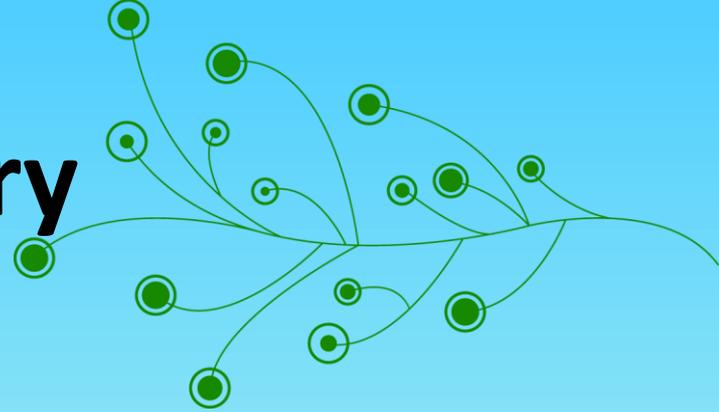
How do we get rid of them?

Overview



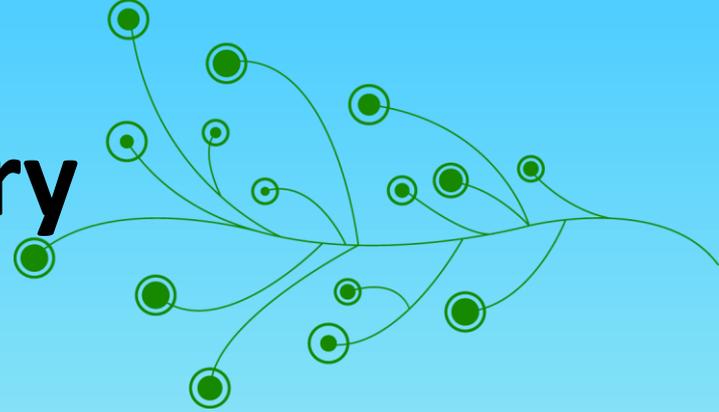
- Germ History
- How Germs Spread
- Common Diseases
- Hand Washing
- Proper Cleaning and Disinfecting

Germ History



- **10,000-8,000 B.C.** Many humans are farmers. They get illnesses from animals. They get measles from dogs, flu from pigs, anthrax from sheep, and tuberculosis from cows.
- **400 B.C.** Greek physician, Hypocrites, declares that diseases don't come from demons or gods.
- **A.D. 1347** The Black Death spreads to Asia, Africa, and Europe. It wipes out one third of all Europeans.

Germ History



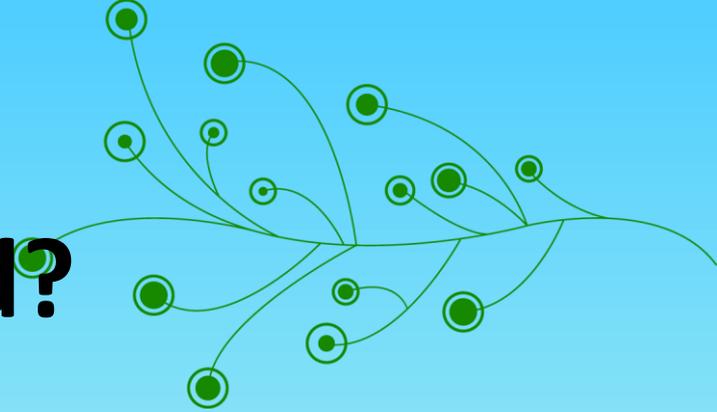
- **A.D. 1492** When Christopher Columbus arrives in the new world, he brings diseases with him that the natives die from.
- **1840** Hungarian doctor Ignaz Semmelweis has his hospital staff wash their hands before attending to patients. He was trying to figure out if it made a difference in saving lives.
 - In the United States this came to light during the Civil War in battlefield hospitals.

Germ History



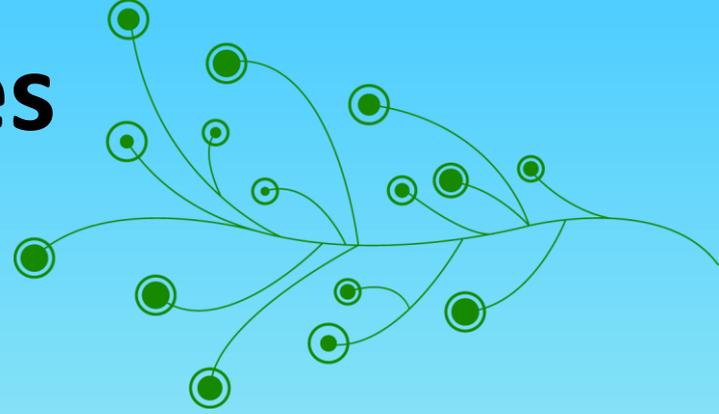
- **1860** It is discovered that bacteria causes illnesses by French chemist Louis Pasteur. He calls the bacteria "germs."
- **1928** Alexander Flemming discovers that a mold called penicillium kills bacteria. This discovery leads to the first antibiotic. It makes some diseases treatable for the first time
- **1946** The United States creates the Communicable Disease Center, now called the Centers for Disease Control and Prevention. It fights diseases worldwide.

How Do Germs Spread?



- Coughing
- Sneezing
- Dirty hands
- Contaminated food and water

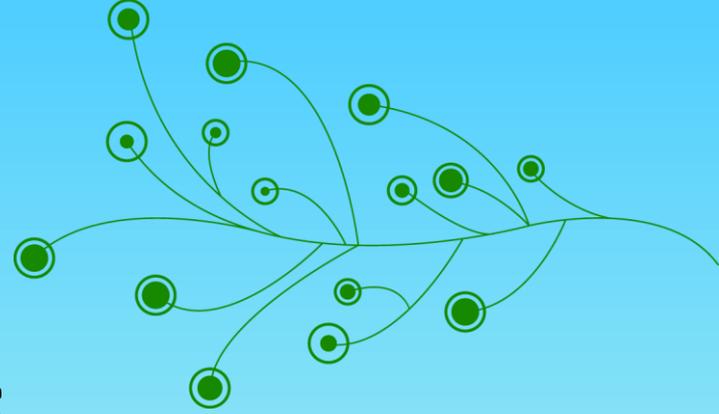
Environmental Surfaces Where Germs Can Be Found?



- Door knobs and Stair rails
- Sinks
- Desk tops
- Trash cans
- Money
- Body
- Shared equipment
- Sharing pencils/pens
- Water fountains
- And many others



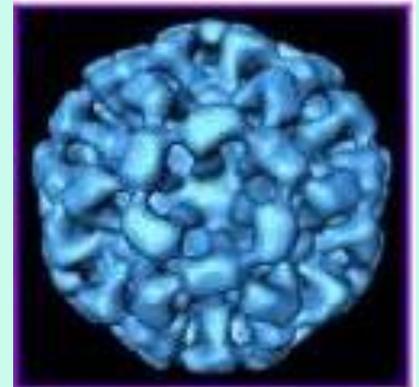
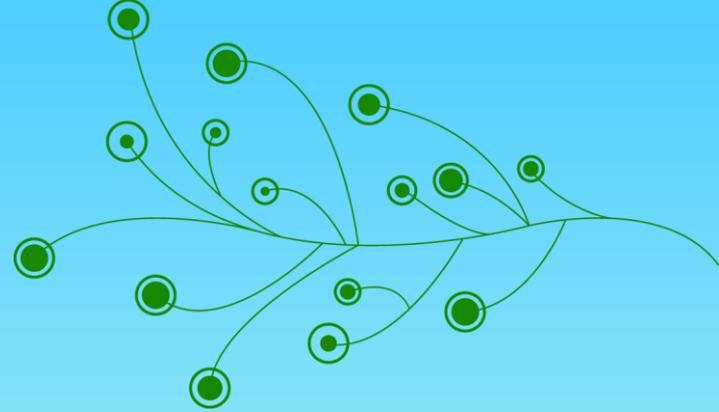
Illness Associated With Contaminated Environmental Surfaces



- Common cold
- Flu and other viruses
- Commonly associated with food borne illness due to fecal/oral transmission
- MRSA

Common Diseases

- **Norovirus**
 - **Way Transmitted**
 - Hand to mouth
 - **Prevention**
 - Wash Hands Often
 - Clean and Sanitize Surfaces



Common Diseases



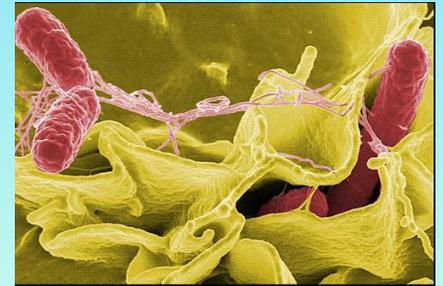
- **Salmonella and E Coli**

- **Way Transmitted**

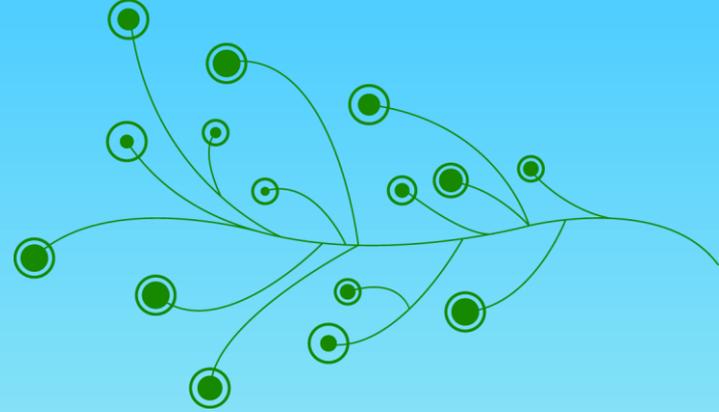
- **Contaminated and Improperly Cooked Food**
- **Hand to Mouth**
- **Cross Contamination**

- **Prevention**

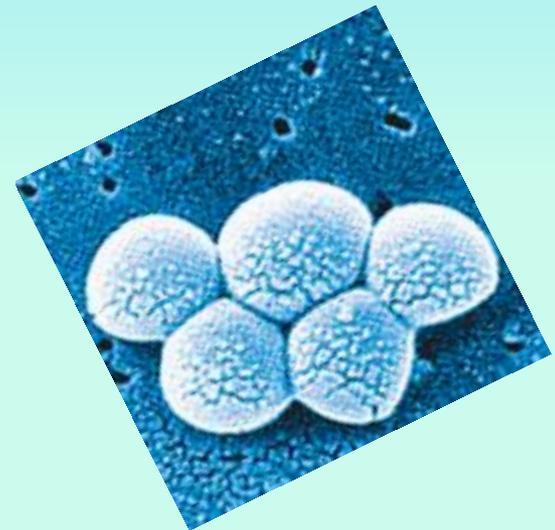
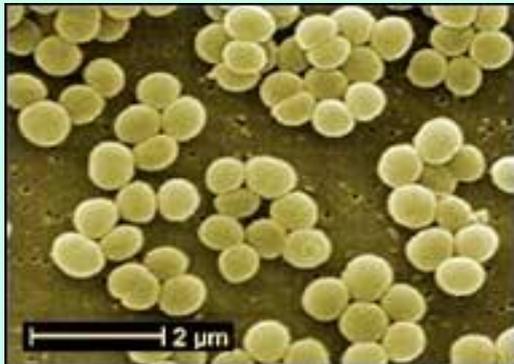
- **Wash Fruits and Vegetables Thoroughly**
- **Cook Food to Proper Temperatures**
- **Wash Hands Before Eating**
- **Clean Food Preparation Surfaces Thoroughly**



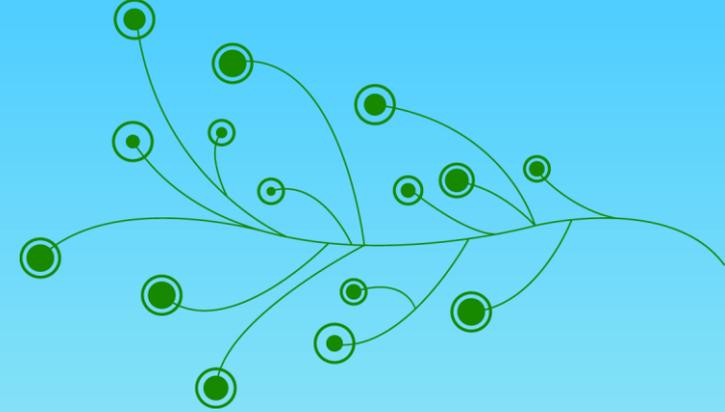
Bacteria



- Humans may carry Staph bacteria in or on their body at any the time
- Part of the normal flora of the body



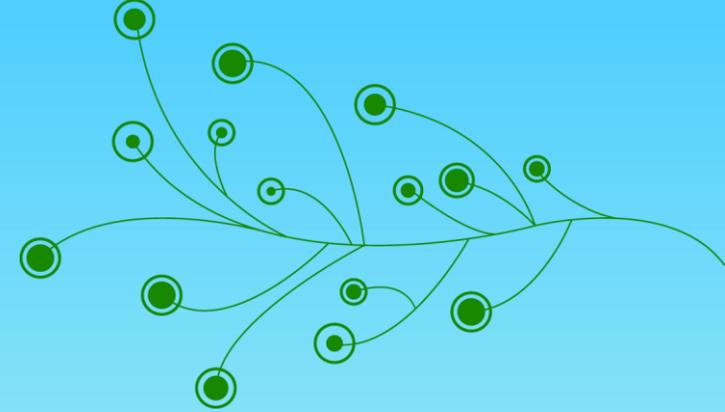
MRSA



- Causes a skin infection
 - Commonly occurs at sites of cuts and/or abrasions
- How MRSA is Transmitted
 - Usually transmitted
 - Skin to skin contact
 - From contaminated surfaces

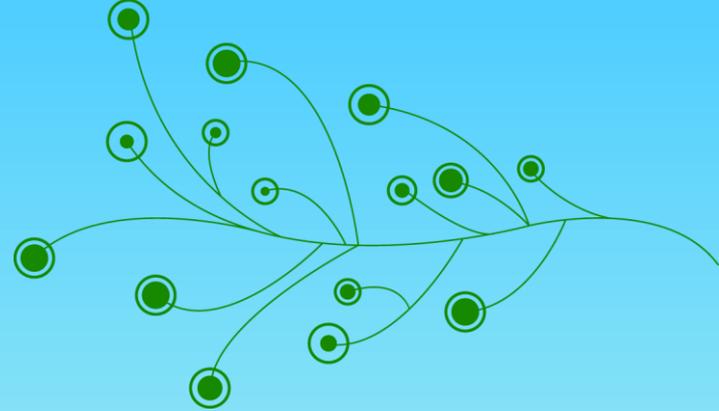


MRSA



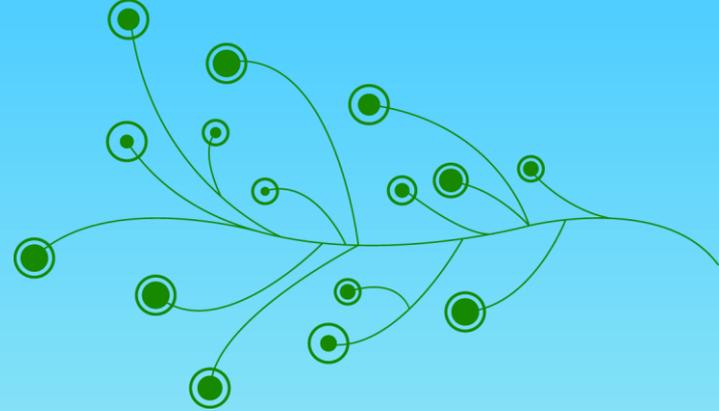
- **Where do You get MRSA?**
 - Anywhere
 - Setting that have these factors
 - **5C's – *Crowding*, frequent skin to Surface *Contact*, *Compromised Skin*, *Contaminated* items and surfaces, and lack of *Cleanliness***
 - Locations
 - **Schools, dormitories, military barracks, households, correctional facilities, and daycare centers**

MRSA



- **What can be done do to prevent MRSA?**
 - **Clean and sanitize all surfaces regularly and well**
 - **In Schools**
 - **Locker Rooms, Gym Floors, Wrestling Mats, Exercise Equipment, Shower Rooms**
 - **In Correctional Facilities**
 - **Cells, Common Areas, Shower Rooms**

MRSA

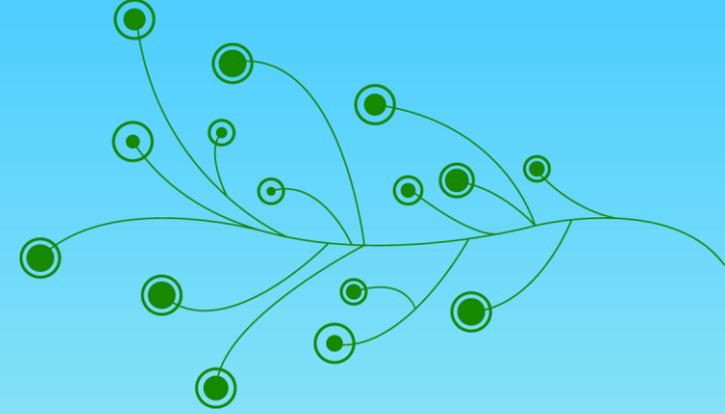


- **Is This New?**

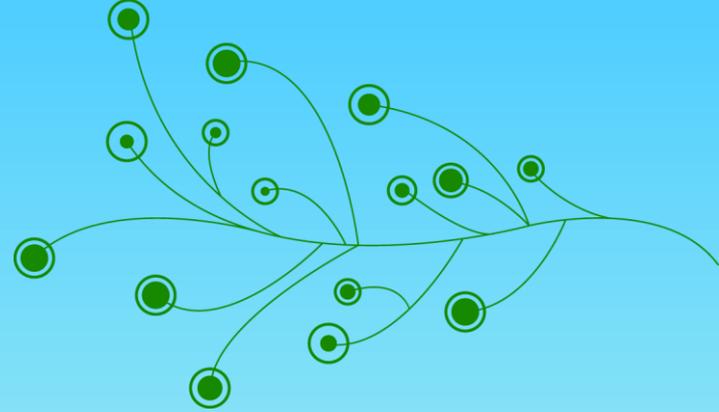
No, MRSA infections have been circulating for many years, primarily in health care settings. However, in recent years, health care professionals have seen more and more cases outside of health care settings, which are referred to as “community associated” infections.

Prevention

- How Do We Get Rid Of Germs?



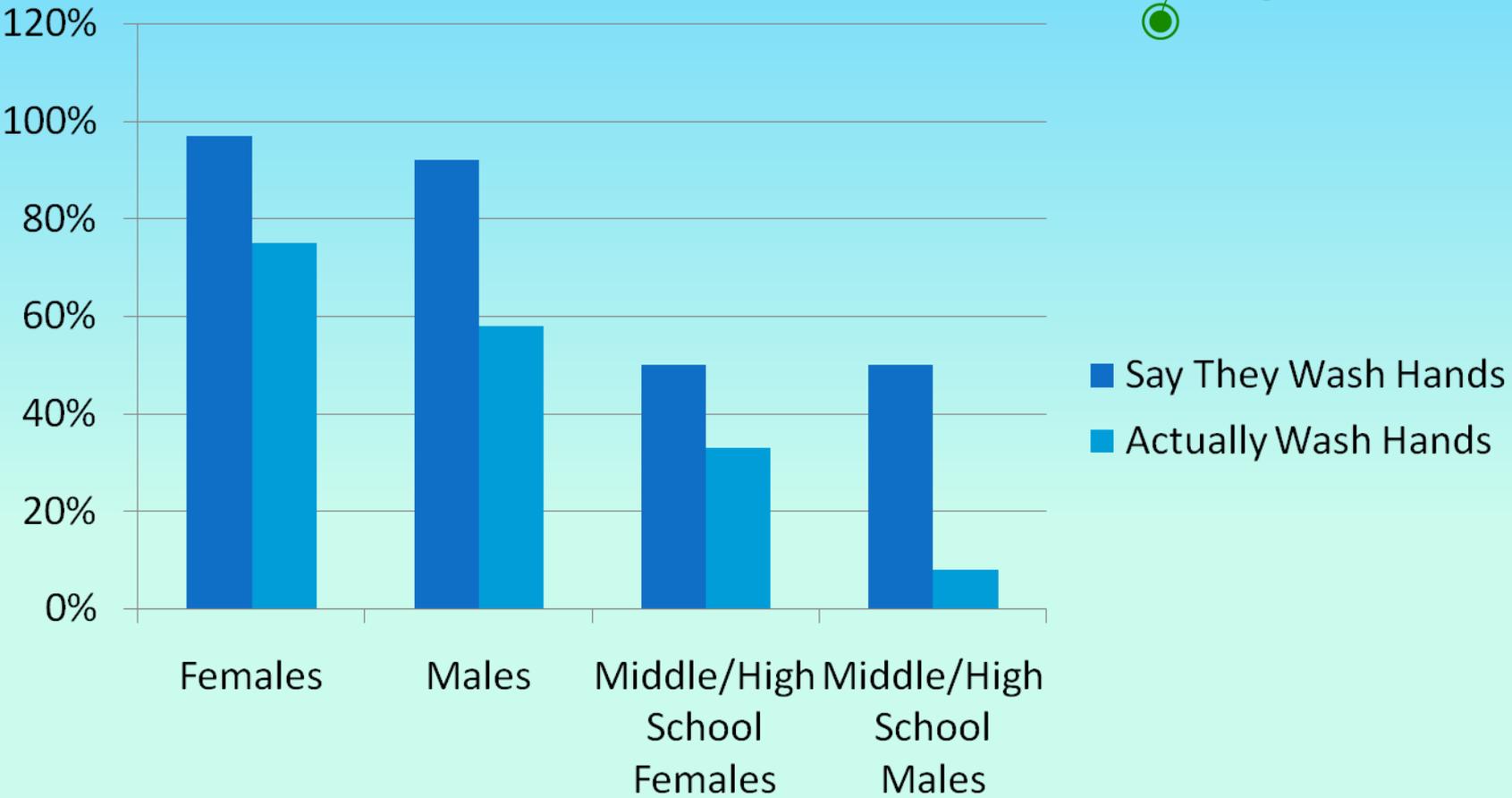
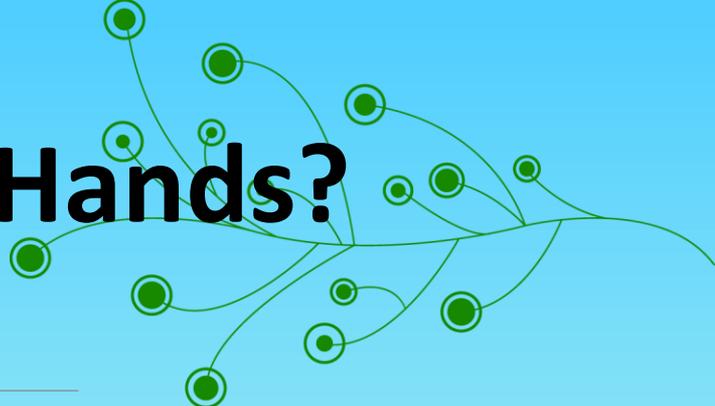
Handwashing



- **Wash Your Hands: The Right Way**
- **When should you wash your hands?**
- **What is the right way to wash your hands?**
- **How should you use hand sanitizer?**

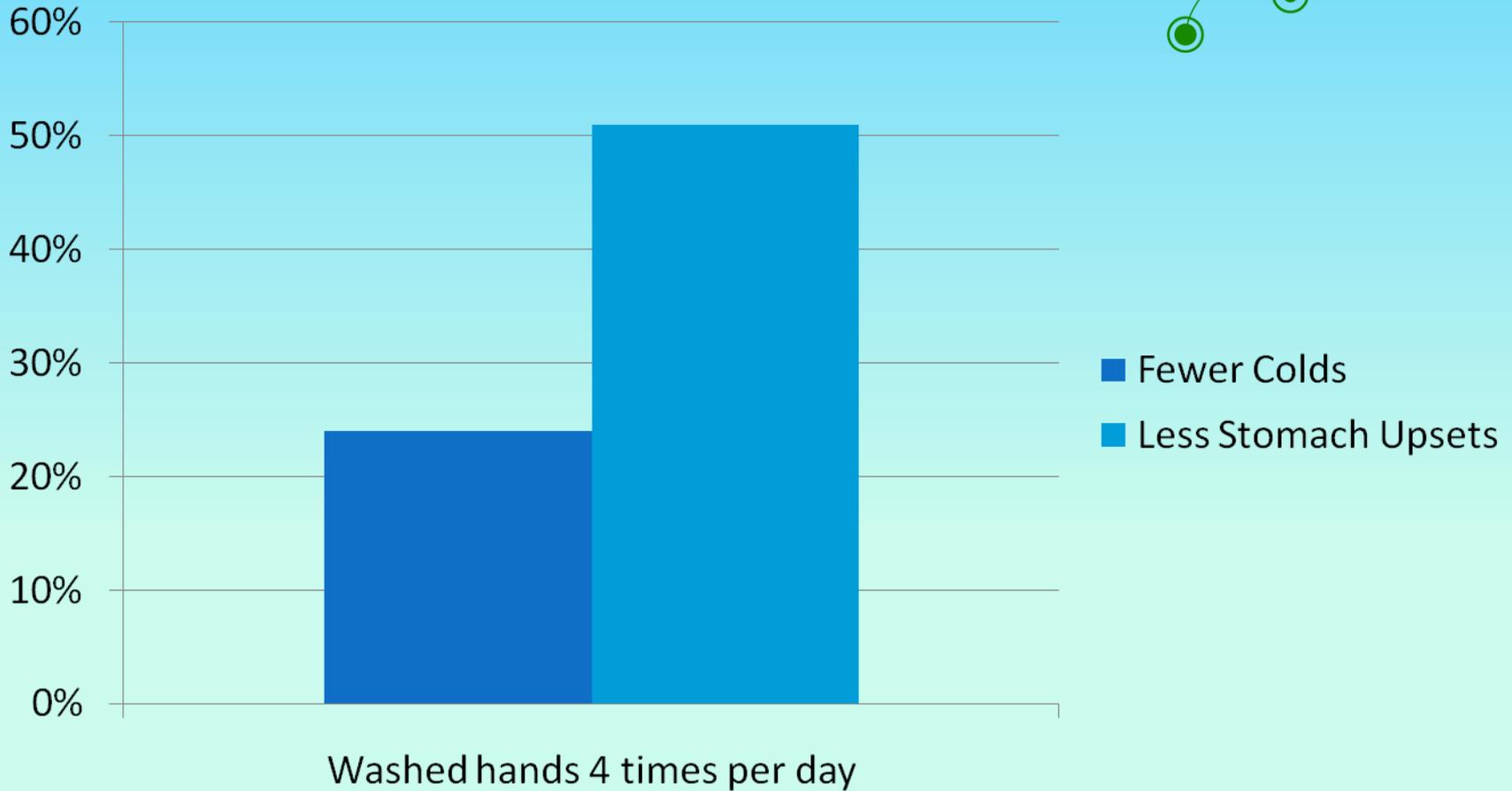
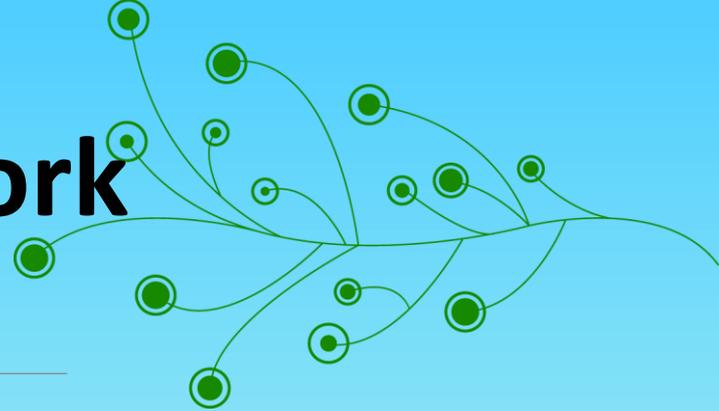


Do We Really Wash Our Hands?



Handwashing Does Work

Day Care Children



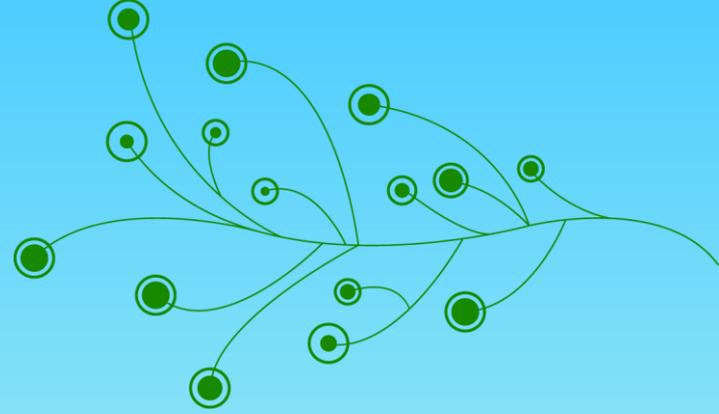
2006 Minnesota Hand Washing Tool Kit

Handwashing



- Wash hands with soap & warm water for 20 seconds
- Dry hands with a paper towel or with an air hand dryer.

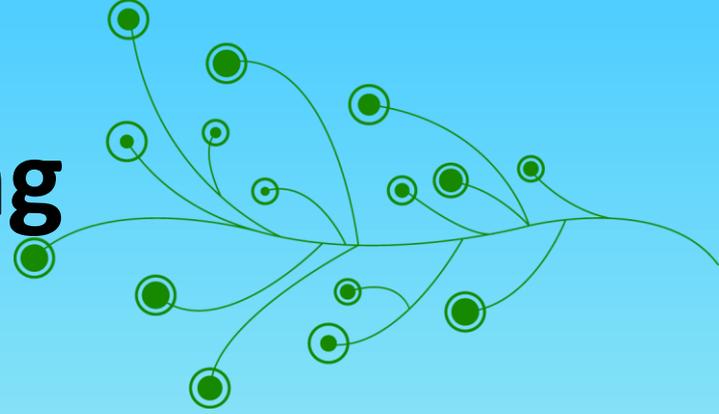




Show And Tell

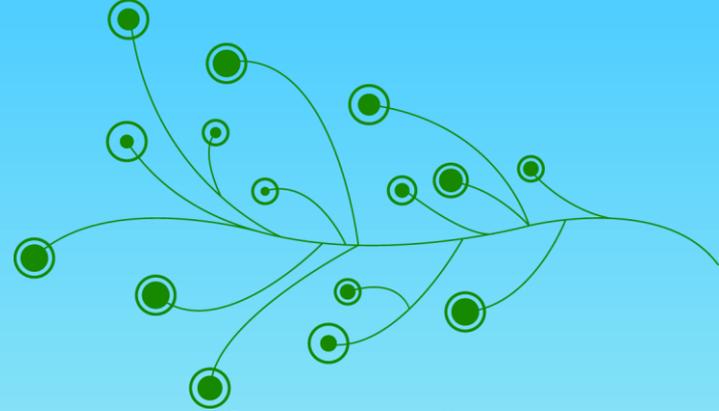
- **Glow Germ and Black Light**
- **For Kids**
 - **Sprinkle cinnamon on hands and wipe off on paper towel to simulate dirt.**

Time For Hand Washing



- **Make time for hand washing**
 - **Stress how important**
 - **80 % of Disease is Transmitted by Hands – It is the single most important vehicle in disease transmission**
- **Remember**
 - **2 Choruses of Happy Birthday is approximately 20 seconds. Or Old McDonald Had A Farm.**

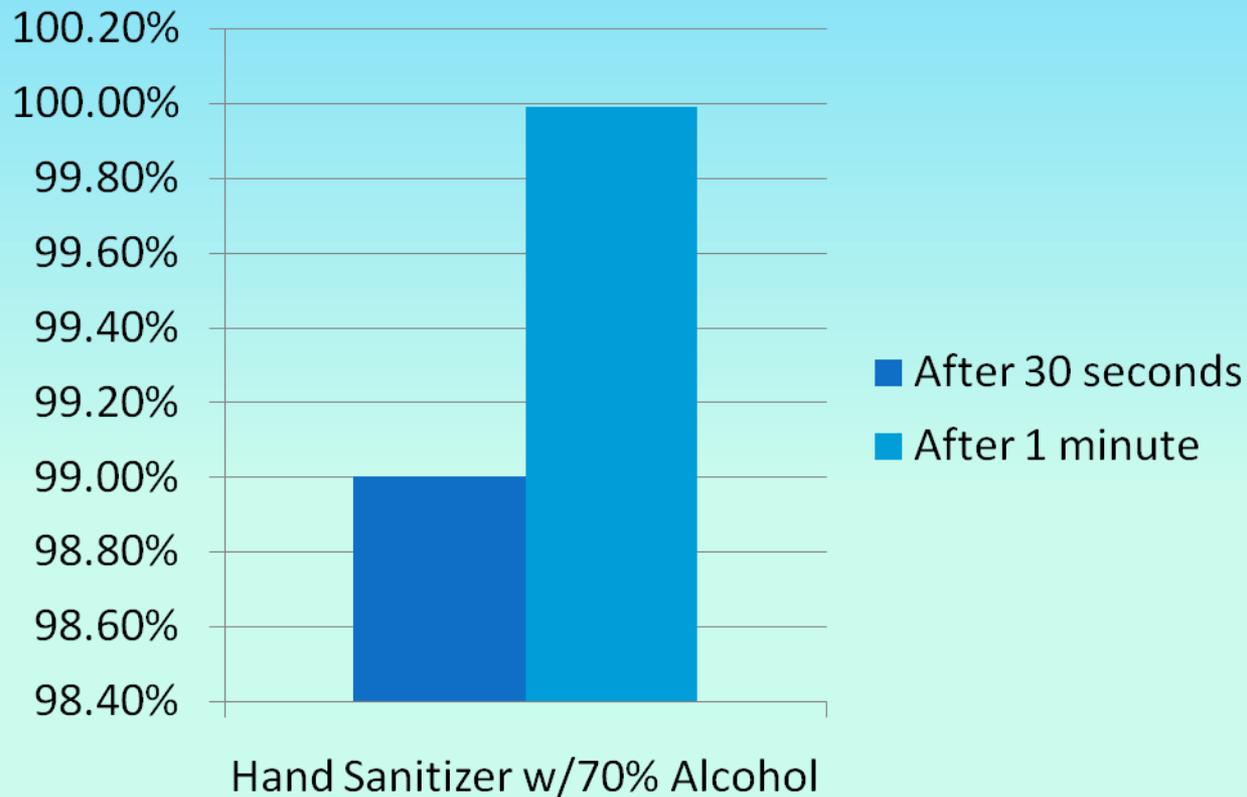
When Should We Wash Our Hands?

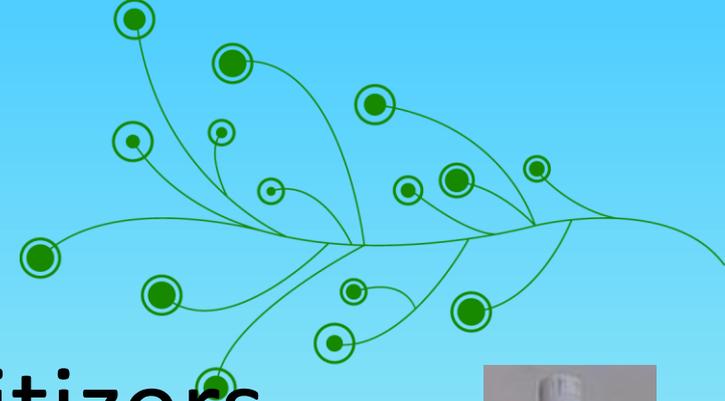


- After using the toilet room—even if you do not get your hands wet
- After handling trash, soiled articles, doorknobs, etc.
- After touching body parts-nose, hair, face, etc
- Before preparing food and after handling raw food products
- After handling pets and pet food, changing diapers, etc.

Hand Sanitizers

- Are they effective?





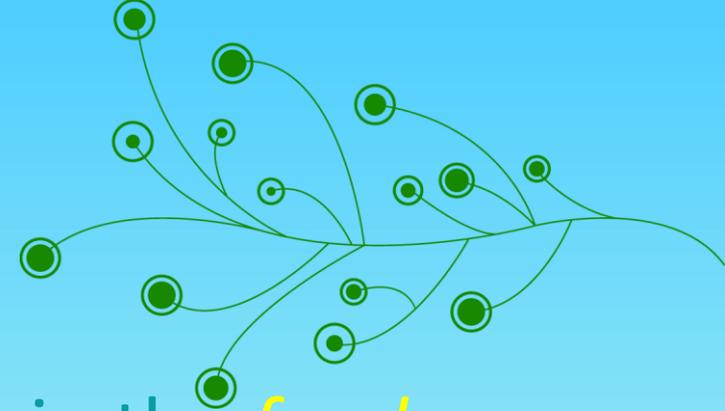
When to use Hand Sanitizers



- If hand washing is not available.
- Use an alcohol based hand sanitizer of at least 60% alcohol.
- REMEMBER – hand sanitizers reduce the number of germs, but do not eliminate all types of germs.



When Not To Use Hand Sanitizers

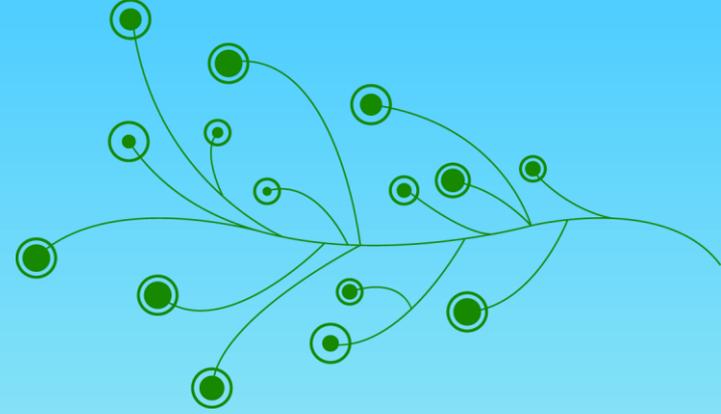
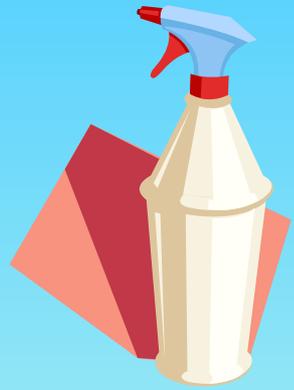


- Hand sanitizer is not effective in the food service industry, where the hands are kept wet frequently during food preparation. Hand sanitizer cannot effectively remove fecal matter on the hands from poor handwashing after using the bathroom, or from the handling of vegetables grown in manure. Coming into contact with bodily fluids, or with dirt requires a rigorous hand washing.

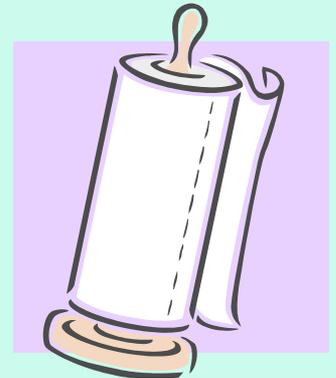
Other Prevention Measures



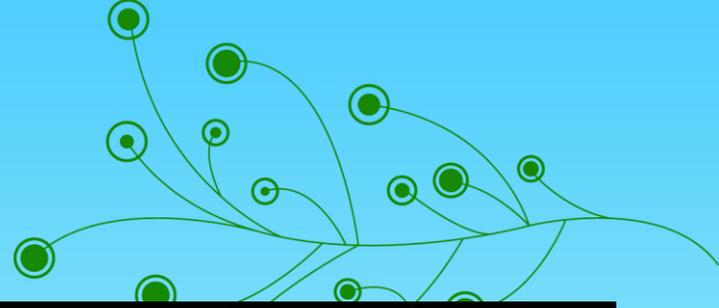
- Food Service Worker with an open or draining wound is required to:
 - If wound is on the hand(s) then:
 - the wound must be covered by an impermeable cover and a single use glove.
 - If the wound is on the exposed arm then:
 - the wound must be covered by an impermeable cover.
 - If the wound is on any other part of the body then:
 - The wound must be covered by a dry, durable, tight-fitting bandage.



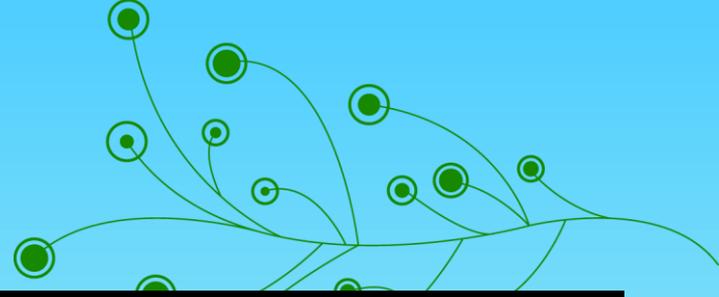
PROPER CLEANING AND DISINFECTING



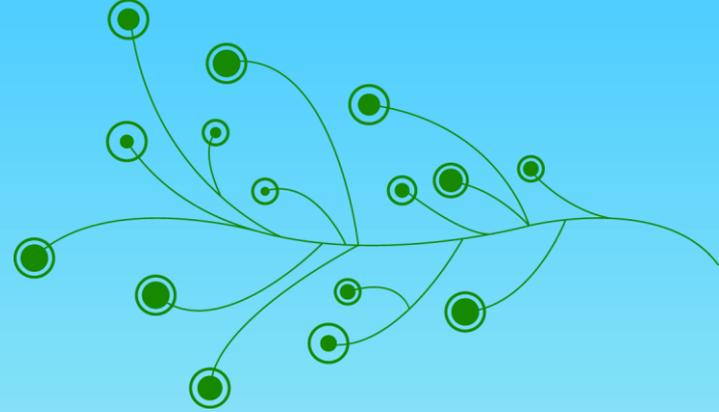
Sneezing



Coughing



Cleaning



- **IMPORTANT!!**

- Stress The Surface Must Be Clean
FIRST.

- Cleaning Removes Germs,
Dirt and Impurities from
surfaces.





Cleaning in the School Setting

- Focus on **Common Touch Points**

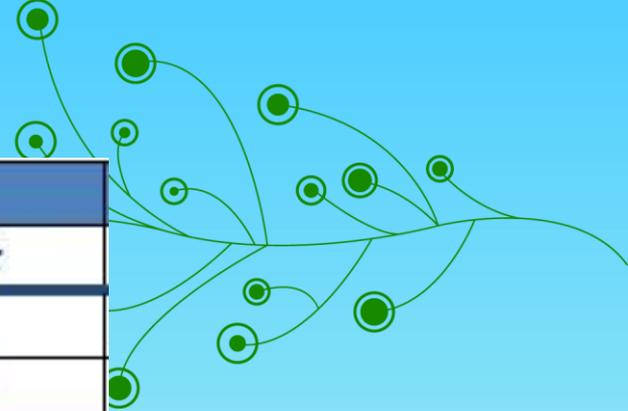
The key to minimizing the spread of germs is to clean and sanitize these surfaces frequently.

Remember to stress it is just as important to have a clean restroom or desk as it is to have a shiny floor.

CTP Checklist: Critical Areas for Sanitation

- ✓ Restrooms
 - Toilets/urinals – all parts especially seat & handles
 - Sinks – basin and handles
 - Dispensers – hand towel, tissue, hand soap & CTP such as levers
 - Doors – handles and push plates
 - Stalls – all CTP such as handles, locks and grab bars
 - Floors
- ✓ Classrooms
 - Desk and table tops
 - Chairs
 - Counters
 - Computer keyboards and mice
 - Phone
 - Pencil sharpeners
 - Shared tools
 - Props and toys
 - Door handles/plates
 - Hard floors
 - Carpet (if vomit has been observed)
- ✓ Cafeteria
 - Tables and seats
 - CTP in serving line
 - Door handles
 - Vending machines
- ✓ Athletic areas
 - Wrestling mats, work-out equipment and any other shared equipment
 - Lockers
 - Door handles
 - Showers and handles
- ✓ Office/Conference area
 - Counters, conference tables and shared desks
 - Copy machines and selection pads
 - Door handles
 - High-touch tools (e.g. sign-in clipboards and pens)
- ✓ Entryways
 - Door handles and other Touch Points
- ✓ Stairways
 - Hand railing and other CTP
- ✓ Hallways
 - Door handles and drinking fountains
 - Other CTP (e.g. counters)
- ✓ Buses
 - Seats
 - Grab rails
 - Other CTP

| Cleaning Area | Routine Cleaning Frequency | |
|---|----------------------------|--------------------|
| | <i>Day Shift</i> | <i>Night Shift</i> |
| Restrooms (including CTP) | | Daily |
| | | Custodial |
| Classroom desktops & CTP | Daily - end of day | 1x week |
| | Teacher | Custodial |
| Primary CTP, common areas, hallways, gym, cafeteria, other | 2x week | |
| | Custodial | |
| Office/Personal space CTP | Daily | |
| | Self | |
| Bus CTP | 2x week | |
| | Drivers | |
| Classroom hard floors | | 1x week |
| | | Custodial |



Cleaning in the School Setting

CDC

How To Clean and Disinfect Schools To Help Slow the Spread of Flu

<http://www.cdc.gov/flu/school/cleaning.htm>

School Guide

How to Clean and Disinfect Schools to Help Slow the Spread of Flu

Cleaning and disinfecting are part of a broad approach to preventing infectious diseases in schools. To help slow the spread of influenza (flu), the first line of defense is getting vaccinated. Other measures include covering coughs and sneezes, washing hands, and keeping sick people away from others. Below are tips on how to slow the spread of flu specifically through cleaning and disinfecting.

- 1. Know the difference between cleaning, disinfecting, and sanitizing.**

Cleaning removes germs, dirt, and impurities from surfaces or objects. Cleaning works by using soap (or detergent) and water to physically remove germs from surfaces. This process does not necessarily kill germs, but by removing them, it lowers their numbers and the risk of spreading infection.

Disinfecting kills germs on surfaces or objects. Disinfecting works by using chemicals to kill germs on surfaces or objects. This process does not necessarily clean dirty surfaces or remove germs, but by killing germs on a surface after cleaning, it can further lower the risk of spreading infection.

Sanitizing lowers the number of germs on surfaces or objects to a safe level, as judged by public health standards or requirements. This process works by either cleaning or disinfecting surfaces or objects to lower the risk of spreading infection.
- 2. Clean and disinfect surfaces and objects that are touched often.**

Follow your school's standard procedures for routine cleaning and disinfecting. Typically, this means daily sanitizing surfaces and objects that are touched often, such as desks, counter tops, door knobs, computer keyboards, hand-on learning items, faces, handsets, phones, and toys. Some schools may also require daily disinfecting these items. Standard procedures often call for disinfecting specific areas of the school, like bathrooms.

Immediately clean surfaces and objects that are visibly soiled. If surfaces or objects are soiled with body fluids or blood, use gloves and other standard precautions to avoid coming into contact with the fluid. Remove the spill, and then clean and disinfect the surface.
- 3. Simply do routine cleaning and disinfecting.**

It's important to match your cleaning and disinfecting activities to the types of germs you want to remove or kill. Most studies have shown that the flu virus can live and potentially infect a person for only 2 to 8 hours after being deposited on a surface. Therefore, it is not necessary to close schools to clean or disinfect every surface in the building to slow the spread of flu. Also, if students and staff are dismissed because the school cannot function normally (e.g., high absenteeism during a flu outbreak), it is not necessary to do extra cleaning and disinfecting.

Flu viruses are relatively fragile, so standard cleaning and disinfecting practices are sufficient to remove or kill them. Special cleaning and disinfecting practices, including wiping down walls and ceilings, frequently using room air deodorizers, and fumigating, are not necessary or recommended. These practices can irritate eyes, noses, throats, and skin; aggravate asthma; and cause other serious side effects.

 U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
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- 4. Clean and disinfect correctly.**

Always follow label directions on cleaning products and disinfectants. Wash surfaces with a general household cleaner to remove germs. Rinse with water, and follow with an EPA-registered disinfectant to kill germs. Read the label to make sure that EPA has approved the product for effectiveness against influenza A virus.

If an EPA-registered disinfectant is not available, use a fresh chlorine bleach solution. To make and use the solution:

 - Add 1 tablespoon of bleach to 1 quart (4 cups) of water.
 - For a larger supply of disinfectant, add ½ cup of bleach to 1 gallon (16 cups) of water.
 - Apply the solution to the surface with a cloth.
 - Let it stand for 3 to 5 minutes.
 - Rinse the surface with clean water.

If a surface is not visibly dirty, you can clean it with an EPA-registered product that both cleans (removes germs) and disinfects (kills germs) instead. Be sure to read the label directions carefully, as there may be a separate procedure for using the product as a cleaner or as a disinfectant. Disinfection usually requires the product to remain on the surface for a certain period of time.

Use disinfecting wipes on electronic items that are touched often, such as phones and computers. Pay close attention to the directions for using disinfecting wipes. It may be necessary to use more than one wipe to keep the surface wet for the stated length of contact time. Make sure that the electronics can withstand the use of liquids for cleaning and disinfecting.

Routinely wash eating utensils in a dishwasher or by hand with soap and water. Wash and dry bed sheets, towels, and other linens as you normally do with household laundry soap, according to the fabric labels. Eating utensils, dishes, and linens used by sick persons do not need to be cleaned separately, but they should not be shared unless they've been washed thoroughly. Wash your hands with soap and water after handling soiled dishes and laundry items.
- 5. Use products safely.**

Pay close attention to hazard warnings and directions on product labels. Cleaning products and disinfectants often call for the use of gloves or eye protection. For example, gloves should always be worn to protect your hands when working with bleach solutions.

Do not mix cleaners and disinfectants unless the labels indicate it is safe to do so. Combining certain products (such as chlorine bleach and ammonia cleaners) can result in serious injury or death.

Ensure that custodial staff, teachers, and others who use cleaners and disinfectants read and understand all instruction labels and understand safe and appropriate use. This might require that instructional materials and training be provided in other languages.
- 6. Handle waste properly.**

Follow your school's standard procedures for handling waste, which may include wearing gloves. Place no-touch waste baskets where they are easy to use. These disposable items used to clean surfaces and items in the trash immediately after use. Avoid touching used tissues and other waste when emptying waste baskets. Wash your hands with soap and water after emptying waste baskets and touching used tissues and similar waste.

www.cdc.gov/flu/school
1-800-CDC-INFO
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Cleaning in the School Setting



- Frequency 64CSR18 General Sanitation Rule
 - 10.2. Cleaning and sanitizing shall be conducted at a frequency necessary to maintain an environment conducive to the general safety, health and comfort of the users.
 - 10.3. A written plan providing for a regular schedule of housekeeping tasks shall be provided and implemented for institutions, **schools**, care facilities, lodging facilities and organized camps.

Disinfecting And Sanitizing

- Disinfecting Kills Germs On Surfaces and Objects.
- Sanitizing Lowers The Number Of Germs On Surfaces and Objects To Safe Levels.



Disinfecting - What To Use

- EPA Registered Disinfectant
- Bleach
 - Add 1 tablespoon of bleach to 1 gallon of water – For Cleaning Surfaces (ex. School Desks)
 - Apply to solution to the surface (50ppm - 100ppm)
 - Let it stand for 3-5 minutes

Blood borne Pathogen Disinfection = ¼ cup bleach to one gallon of water

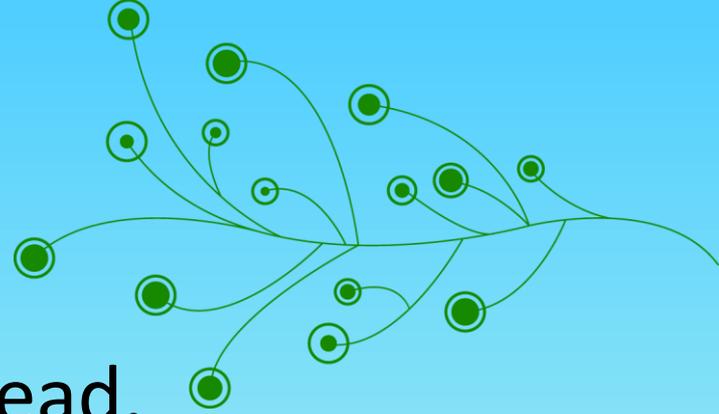


Another Popular Disinfectant

- Quaternary Ammonia
 - Odorless
 - Usually tinted blue or red
 - 200 ppm to 400 ppm
 - Educate users to mix by manufacturers directions

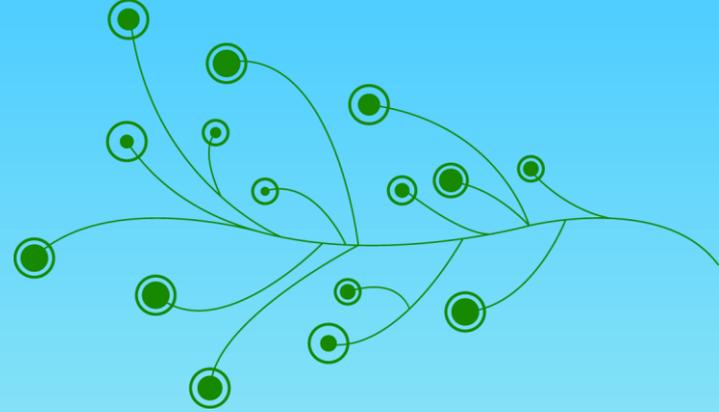


In Summary



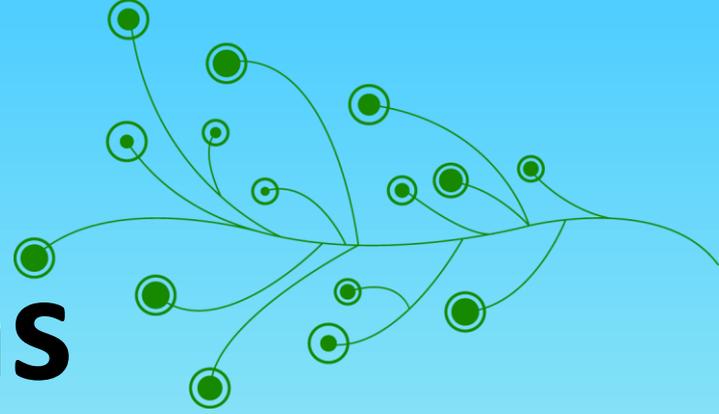
- Common ways Germs are spread.
- Prevention is the key preventing the spread of Germs.
 - Hand washing
 - Cleaning Surfaces on a regular basis
 - Disinfecting Surfaces on a regular basis

Resources



- CDC <http://www.cdc.gov>
- CDC Handwashing: Clean Hands Save Lives Website
- Minnesota Department of Health – Environmental Health Services 2006 Hand Washing Tool Kit.

Questions



- Thank you