Health Protection

Disinfection Alternatives in Child Care Settings
Table of Contents

A. Purpose

B. Glossary of Terms

C. How are Germs Spread?

D. How You Can Reduce the Spread of Germs and Disease?

E. Alternatives to Bleach as a Disinfectant

F. Questions and Answers

G. Other Helpful References
A. Purpose

This booklet explains how germs are spread in child care facilities. It also explains the differences between cleaning, sanitizing and disinfecting; the use of household bleach as a sanitizer/disinfectant; and the use of acceptable alternatives. In child care facilities the use of bleach as a sanitizer and disinfectant is the most effective and least expensive, however there are times when an alternative is needed.

B. Glossary of Terms

Cleaning – removal of “soil” with soap and hot water. Some examples of “soil” include dirt, food residue, vomitus and stool.

Contact Time – the amount of time required for a specific concentration of disinfectant to kill germs (germs are also called microorganisms).

Disinfecting – killing microorganisms on non-food contact surfaces such as toys, diaper change tables and door handles. We use disinfectants to do this.

Infectious – means a disease which can spread from person to person.

ppm – means “parts per million”, and refers to the concentration of a substance. In metric terms, it refers to the number of milligrams of a substance in a liter of water.

Sanitizing – this is basically the same as disinfecting, but it is done on food contact surfaces such as cutting boards, counters and dishes. We use sanitizers to do this.

Quaternary Ammonium – commonly known as quats

Chlorine - easily available in bleach

C. How are Germs Spread?

Child care facilities may serve as settings for the spread of infectious diseases. The spread of disease can occur through touching contaminated surfaces, objects, careless handling of food or by poor hand washing practices.

Germs such as E. coli, Salmonella & Norovirus (also called Norwalk virus) are just a few of the many causes of child care illnesses. They can cause illnesses like food poisoning, gastroenteritis (also wrongly called “stomach flu”), colds, influenza and pinkeye, to name some. Approved sanitizers & disinfectants have been proven to reduce germs to a level considered safe from a public health view point.
D. How You Can Reduce the Spread of Germs and Disease

There are several things you can do to prevent the spread of disease. It is important to be aware of children who may not be feeling well, and where possible, keep them away from the other children or have them stay home. Staff who are not well should similarly not be working with children, and especially not preparing food if they have an upset stomach.

a) Hand washing

Washing your hands is the single most important thing you can do to prevent the spread of disease. You should wash your hands whenever they may become contaminated and before preparing food.

1. Wet your hands with warm, running water.
2. Using liquid soap, lather well for 15 seconds, cleaning fingertips, between fingers and under your nails.
3. Rinse well for 15 seconds.
4. Dry your hands using a paper towel.
5. Turn off the tap and open the door using the paper towel.

b) Cleaning and Disinfecting Non-food Contact Surfaces

Use these steps to clean and disinfect toys, cupboard doors, shelving units, chairs and sleep mats.

1. Wash with warm water and soap; wipe down surfaces that need cleaning with a cloth or scrub brush.
2. Rinse well with clean, warm water.
3. Use a bleach solution with 100 ppm chlorine (2 tablespoons (30 ml) of fresh bleach in a 1 gallon (4 litres) ice cream pail of water) or quaternary ammonium solution at a strength of 200 ppm (follow the label directions).

Never mix bleach and ammonia – it will cause deadly fumes!

4. Wet the surface down with the solution and let it sit for 2 minutes.
5. Let air dry... do not rinse or wipe.

Note: If sudden outbreak of vomiting or diarrhea occurs it could be due to Norovirus. Norovirus is a very hardy microorganism and a very strong concentration of bleach to water (one cup fresh bleach to 10 cups of water) with a contact time of one minute is required to kill these microorganisms. At this concentration, bleach can damage some surfaces. A highly effective, easy and less caustic product called Virox® is available from janitorial suppliers. Contact a Licensing Officer or Public Health Inspector in your area who will provide detailed information on how to handle Norovirus outbreaks.
c) Cleaning and Sanitizing Food Contact Surfaces

Use these steps to clean and sanitize dishes, counters, cutting boards and eating tables.

1. **Wash** – In clean hot water containing an approved dish detergent
2. **Rinse** – In clean hot water to remove detergent to help maintain strength of Sanitizing Solution
3. **Sanitize** – By submerging dishes for 2 minutes in clean warm water with a solution of:
   (i) Chlorine at 100 ppm (bleach: 2 tablespoons (30 ml) per gallon (4 litres) water)
   (ii) Quaternary ammonium solution (200 ppm), or
   (iii) Iodine (12.5-25 ppm).
4. **Air Dry** – On a clean, nonabsorbent surface. Do not wipe.

   Note: Some toys can be submerged in water and can therefore be sanitized using this method.
   Wipe down counters and tables with the sanitizer solution. Air dry.

E. Alternatives to Bleach as a Disinfectant

A variety of commercial chemical formulations are available as alternatives to bleach for use as disinfectants. **Please note: only chlorine, quaternary ammonium or iodine are approved for use with food contact surfaces.** For a disinfectant to be approved for use in Canada it must have a Drug Identification Number (DIN). Products without a DIN have not been tested for their ability to kill germs. To be considered an acceptable alternative to bleach as a disinfectant, the product must meet this requirement.

Whichever product is chosen, all approved disinfectants **must be used in strict accordance** with the manufacturer’s instructions on the label.

In addition to the name of the product, manufacturer and active ingredient, the label must clearly state the intended use of the product, as the use of some disinfectants may not be appropriate in a child care setting.

Directions for use must provide instruction on:

- Precautionary information on safe handling procedures
- Appropriate dilutions and application procedures
- Contact time (how long to leave the disinfectant on the surface)
- Requirements for cleaning of surfaces prior to disinfection
- Requirements for rinsing
- Stability of product (e.g. daily mixing)
- Disposal of waste materials

Also, look for first aid instructions on the label.

Always ensure safe storage of any cleaning product!
F. Questions and Answers

1. Why is bleach generally recommended over other products? Bleach is recommended over other products because it is inexpensive, strong and relatively simple to mix. Bleach is safe to use in day care in the concentrations recommended. The compound breaks up very quickly and the reactive part is only available for a brief period of time and then forms products (salt and water) that are no longer reactive and are safe if ingested and safe for the environment.

2. How long can I keep bleach? Bleach is easily broken down by light; that is why bleach is sold in solid colour bottles and new solutions must be made every day. Once the bleach is broken down by light and has lost its colour and odour it is no longer useful.

3. If a product such as a pine fluid or phenols states it kills 99% germs or bacteria, is it acceptable instead of bleach? It depends, based on what the active ingredient is and whether or not that active ingredient has been approved. Look for a DIN.

4. Bleach has damaged staff and children’s clothing. Is there a product that is safer for clothing? Quaternary ammonium is safer for clothing, but is not effective against Norovirus.

5. Bleach has an offensive odour. Is there a disinfectant that is odourless? Yes. Quaternary ammonium has a less offensive odour.

6. Are there any natural cleaning products that will sanitize? No.

7. I heard that dirt and dish soap neutralize bleach and make it ineffective as a sanitizer. Is this true? Yes, this is why dishes must first be washed and rinsed before being submerged in a bleach solution and air dried. Air drying is required to ensure bleach has a sufficient contact time to kill germs.

8. Where are products such as Virox® available for purchase? Check your local yellow pages under “janitorial supplies”.

G. Other Helpful References


Preventing Illness in Child Care Settings BC Health Planning ISBN 0-7726-1589-1

Interior Health’s Website
www.interiorhealth.ca

Ministry of Health
www.gov.bc.ca

British Columbia Centre for Disease Control
www.bccdc.org

Health Files
www.bchealthguide.org/healthfiles