

Appendix E: Cleaning, Sanitizing, and Disinfecting Equipment and Environment

Know the Differences among Cleaning, Sanitizing, and Disinfecting

Cleaning physically removes visible dirt, dust, crumbs, and germs from surfaces or objects. When cleaning is required as a separate step, use soap (or detergent) and water to physically clean off the surfaces and objects. This will not necessarily kill the germs but, with appropriate technique, will remove some, thereby leaving fewer germs on the surface/object.

Sanitizing is the lowering of the number of germs to a safe level. What is considered a safe level depends on public health standards or requirements at a workplace, child care facility, school, etc.

Disinfecting uses chemicals (disinfectants) to kill germs on surfaces and objects. Some common disinfectants are chlorine bleach and alcohol solutions. Disinfectants usually need to be left on surfaces and objects for a certain period of time (wet contact time) to reduce the germs to an acceptable level. Some disinfectants are cleaners/disinfectants and can be used to clean and disinfect at the same time.

Cleaning, Sanitizing, and Disinfecting Procedure

Following the appropriate steps to clean, sanitize, or disinfect will help reduce the number of germs within the child care facility or school. The use of disposable products, such as paper towels or wipes, is preferred in decreasing the transmission of disease-causing germs to children, students, and staff.

The following are general principles for cleaning, sanitizing, and disinfecting:

- Dispensers/containers: Dispensers/containers can become contaminated with germs if they are reused without proper cleaning procedures in place. The following are tips to prevent their contamination:
 - It is preferred to dispense the sanitization/disinfection product in a disposable pump/squirt/spray dispenser/container rather than a reusable one.
 - If reusable dispensers/containers are used, do not add product to a partially empty dispenser (topping up).
 - If there is a decision to reuse, the dispensers/containers must be emptied, washed, and completely air-dried prior to refilling. (See page 143 of Public Health Ontario’s guidelines for environmental cleaning (April 2018) at www.publichealthontario.ca/-/media/Documents/B/2018/bp-environmental-cleaning.pdf.)
- The physical action of scrubbing removes large numbers of germs from surfaces.
- For sanitizers and disinfectants to work well, first remove dirt, grease, soap, and organic materials such as blood and body fluids, as these materials shield germs from the action of the disinfectant and can neutralize it.
- Cleaners, sanitizers, and disinfectants must be selected on the basis of effectiveness, acceptability, safety, and cost. Not all of these products are effective at destroying certain germs that are spread in child care facilities or schools, nor are they safe for all populations. Do not use solution near children.
- There are a number of commercial disinfectant products available (e.g., quaternary ammonium [quats], accelerated hydrogen peroxide) that have cleaning and disinfection agents included; therefore, these products do both cleaning and disinfection. Provided that the visible dirt has been removed, the initial step of cleaning may not be required. Follow manufacturer’s instructions when using these products.
- Disinfectants must bear a Drug Identification Number (DIN) issued by Health Canada. The DIN lets the user know that the product has undergone and passed a review of its formulation, labelling, and instructions for use. More information on the DIN can be found at <https://health-products.canada.ca/dpd-bdpp/> (Health Canada).
- Cleaners, sanitizers, and disinfectants must be stored and used safely. Those using chemicals need to be knowledgeable and follow safe storage and handling (e.g., mixing chlorine and toilet bowl cleaner produces a toxic gas).
- PPE (e.g., gloves) should be available and used appropriately, as outlined in the product manufacturer’s instructions.

- Cleaning equipment, such as brooms and mops, should be maintained in a clean, dry state after use. Mops that are visibly dirty (e.g., from blood or vomit) should be laundered after use.
- Cleaning should proceed from least to most soiled. To help prevent cross-contamination, it is recommended that reusable cleaning cloths, cleaning utensils, and protective clothing such as rubber gloves be colour-coded.
- Spills involving blood or body fluids must first be wiped up with disposable towels/cloths, which should be placed in a plastic bag for disposal in the regular garbage. The area should then be appropriately cleaned and treated using a disinfectant.
- Having clearly defined schedules that establish routines for frequent cleaning will help to ensure that these tasks are carried out as required. Cleaning schedules can also be used as a helpful reference on the type of cleaner, sanitizer, or disinfectant to use and the procedure to be followed for a specific task. Cleaning schedules should be established according to the type of surface to be cleaned and the type of soiling that occurs.
 - Toys that are mouthed by young children (e.g., hard surface, plush toys) should not be shared. Once used, mouthed toys should be set aside in a bin to be washed, rinsed, and sanitized in accordance with the procedure required for food contact surfaces (or, in the case of soft/plush toys, laundered). Refer to [Appendix G: Laundering Procedures](#) and [Appendix I: Safe Food Handling](#) for more information.

Step 1: Clean surfaces/item.

- Wear disposable gloves or rubber gloves to protect hands from irritation. Perform hand hygiene prior to putting on gloves.
- Fill the clean/sanitized sink or pail with fresh hot water and dish soap.
- Use a clean cloth to clean surfaces.

Step 2: Rinse area or item well with clean water or according to manufacturer's instructions.

Step 3: Sanitize or disinfect.

All approved disinfectants must have a DIN issued by Health Canada (except for household chlorine bleach). These approved disinfectants include chlorine bleach, isopropyl alcohol, quaternary ammonium, and accelerated hydrogen peroxide, and it is required they be used as per the manufacturer's instructions. Chlorine bleach and quaternary ammonium are approved for use as sanitizers for food contact surfaces.

- Apply the sanitizer/disinfectant to the entire surface or item by either a spray (not a fine mist), prepared sanitizer/disinfectant cloth, or disposable wipe. Use only one type of chemical at a time.
- Follow manufacturer's instructions for sanitization or disinfection wet contact time.
- For surfaces that are not visibly dirty, a disinfectant solution can be sprayed/applied directly on the surface, or use a prepared single-use disinfectant wipe to wet the surface. Allow the surface to remain wet for the time allotment, as per the manufacturer's instructions.
- To disinfect surfaces, the treated surfaces must remain wet for the period allocated, as per the manufacturer's instructions, or be allowed to air-dry.
- To sanitize food contact surfaces (e.g., dishes and utensils), see [Appendix F: Dishwashing Procedures](#).

Step 4: Remove gloves and perform hand hygiene.

Cleaning and Disinfection of Blood and Body Fluid Spills

- Disposable gloves must be worn to protect your hands from body fluids. Perform hand hygiene prior to putting on gloves.
- Wipe up the majority of the spill with paper towels and discard into covered, plastic-lined garbage.
- Clean contaminated area with water and a detergent (e.g., dish soap, liquid soap, cleaners), using disposable paper towels. Use additional paper towels to rinse and then another to dry the area.
- Disinfect the area using disinfecting products suitable for the type of surface being disinfected, and follow manufacturer's instructions.
- Discard gloves and all contaminated items used to wipe, clean, and disinfect the spill into a covered, plastic-lined garbage. If reusable rubber gloves were used, they must be washed, disinfected, and air-dried.
- If a mop was used, launder the mop head or rinse it in a disinfecting solution and air-dry. To air-dry the mop head, hang up the mop handle with the mop head pointed down into a janitor's sink or pail.
- Change staff's or child's clothes if soiled with blood or body fluids. Place child's clothes in a plastic bag to send home with their parents. Do not rinse out the clothes at the child care facility or school.

Note: This guidance chart shows the frequency of cleaning, sanitizing, and disinfecting of various surfaces depending on use and how clean or visually dirty the items are. More frequent cleaning, sanitizing, and disinfecting of surfaces may be required during an outbreak.

Cleaning, Sanitizing, and Disinfecting Schedule		
	Cleaned (C) Sanitized (S) Disinfected (D)	Other cleaning methods and notes
BEFORE and AFTER each use		
Kitchen		
Food preparation surfaces	C/S	Before and after contact with food activity and between preparation of raw food and ready-to-eat foods.
Eating surfaces (tables, desks, highchair, booster trays)	C/S	Clean and sanitize multi-use tables before using for eating and before non-food-related activities.
AFTER each use		
Mouthed toys and manipulatives	C/S	Use manual or machine dishwashing process (not at the same time as dishes or cutlery). Plush toys should be laundered at the hottest temperature allowable, as per Appendix F .
Diaper-changing surfaces/ tables, potty inserts, and potties	C/D	
DAILY and when dirty		
Bathroom		
Handwashing sinks, faucets/taps, surrounding counters, soap/paper towel dispensers, and door/ cubical handles	C/D	
Toilet seats, toilet handles, and towel bowls	C/D	
Floors	C/D	
Countertops and fixtures	C/D	

Cleaning, Sanitizing, and Disinfecting Schedule

	Cleaned (C) Sanitized (S) Disinfected (D)	Other cleaning methods and notes
DAILY and when dirty		
Kitchen		
Floors	C	
Stovetops and tabletops	C/S C/D	Sanitize if used as a food contact surface. If tabletop is used for non-food-related activities, disinfect prior to use.
Kitchen equipment, microwave	C/S	
Countertops and sinks	C/S	Countertops used as food contact surfaces need to be sanitized prior to use.
All areas		
Frequently touched items (e.g., entry/cupboard door handles, desks, tables, children's chairs, doorknobs, door handles, light switches)	C/D	
Water table with toys	C/D	Twice daily (midday and end of day). Water is changed. Water table and toys are cleaned and disinfected between uses.
Sand/sensory media table with toys	C/D	Toys are removed and cleaned and disinfected between uses. Sensory media remain dry and replaced every three months or more frequently.
Throw rugs and carpets	C*	Vacuum daily, clean as needed, and shampoo every three months. Avoid using carpet where there are young children and a high risk of spills. *When there is a blood or bodily fluid spill, steam cleaning and disinfection is required. If they cannot be properly cleaned, they must be discarded.
Floors	C	
Cleaning items		
Dusting/cleaning cloths	C	Use disposable cleaning items when possible. If disposable is unavailable, launder.

Cleaning, Sanitizing, and Disinfecting Schedule

	Cleaned (C) Sanitized (S) Disinfected (D)	Other cleaning methods and notes
WEEKLY and when dirty		
All areas		
Sleeping mats, cots, cribs (railings and mattress), and/or playpens	C/D	Weekly, before use by a different child, and whenever wet or soiled.
Bed linens	C	Laundry weekly, before use by a different child, and whenever wet or soiled.
Outside of garbage containers with foot pedal	C/D	
Diaper pails (for cloth diapers)	C/D	Weekly and whenever plastic bag has leaked. Allow to air-dry before replacing plastic bag or closing lid.
Windows and ledges at child level	C/D	Damp-wipe.
Shared plastic manipulatives and toys	C/D	Manual or machine dishwashing process (not at the same time as dishes or cutlery).
Infant/toddler toy shelves and cupboards	C/D	Damp-wipe.
Play/gym mats, larger toys and equipment, riding toys, dry play tables, etc.	C/D	Damp-wipe.
Gym or sporting equipment	C/D	
Musical instruments	C/D	

Cleaning, Sanitizing, and Disinfecting Schedule

	Cleaned (C) Sanitized (S) Disinfected (D)	Other cleaning methods and notes
WEEKLY and when dirty		
Manipulatives/toys		
Plastic puzzles, board books	D	Use a disinfectant wipe. Do not spray or immerse in water.
Computer keyboards and accessories (video games, mice, controllers, etc.)	D	Use a disinfectant wipe. Do not spray or immerse in water.
Chairs	C/D	
Upholstered sofas and chairs	C	Vacuum.
Pillows and cushion covers used in activity areas	C	Launder.
Soft washable toys	C	Launder. Plush toys should be laundered at the hottest temperature allowable, as per Appendix F . Where possible, reserve for use by one child. If there is an outbreak, remove soft toys and launder before putting them back out.
Dress-up clothes	C	Launder. If there is an outbreak, remove dress-up clothes and launder before putting them back out.
Pet areas	C/D	
Cleaning items		
Mops	C	Launder. Use with a disinfectant when cleaning up bodily fluids, then launder at high temperature.
MONTHLY and when soiled		
Kitchen		
Refrigerators	C/S	Clean out the freezer every six months.
Ovens	C	
All areas		
Cubbies and lockers	C/D	Damp-wipe.
Garbage containers (outside)	C	Keep containers covered and emptied weekly.
Drapes and curtains	C	
Air vents	C	Vacuum.
Windows	C	Wash inside and out at least twice a year.

Guidance for Sanitizing and Disinfecting Solutions

Chemical and Concentration	Contact Time	Examples of When to Use
Sanitization		
<p>Quats (Quaternary Ammonium)</p> <p>Surface sanitizing and dishware sanitizing</p> <ul style="list-style-type: none"> • Use at 200 ppm of quats. 	<p>Follow manufacturer's instructions</p> <p>When used at 200 ppm, no rinse required</p>	<ul style="list-style-type: none"> • manual dishwashing • food contact surfaces <ul style="list-style-type: none"> - eating tables - kitchen areas - in-place equipment and surfaces (e.g., food preparation and service areas, countertops, large cooking equipment, etc.) • anything that children may put in their mouth (e.g., infant/toddler toys)
<p>Household Bleach (5.25 % chlorine)</p> <p>Dishwashing</p> <ul style="list-style-type: none"> • Use 50 ppm (parts per million) of chlorine bleach (approximately 4 ml of chlorine bleach and 4 litres of water). 	<p>One minute</p>	<ul style="list-style-type: none"> • manual dishwashing • anything that children may put in their mouth (e.g. infant/toddler toys)
<p>Household Bleach (5.25 % chlorine)</p> <p>Surface sanitizing</p> <ul style="list-style-type: none"> • Use 100 ppm of chlorine bleach. Approximately: <ul style="list-style-type: none"> - 1 ml chlorine bleach and 500 ml water, or - 8 ml chlorine bleach and 4 litres water 	<p>One minute</p>	<p>Food contact surfaces</p> <ul style="list-style-type: none"> • eating tables • kitchen areas • in-place equipment and surfaces (e.g., food preparation and service areas, countertops, large cooking equipment, etc.)

Guidance for Sanitizing and Disinfecting Solutions

Chemical and Concentration	Contact Time	Examples of When to Use
Low-Level Disinfection		
Quats (quaternary ammonium) <ul style="list-style-type: none"> generally used at 400 ppm of quats 	Follow manufacturer's instructions	<ul style="list-style-type: none"> environmental surfaces: floors, walls, play tables, door handles, light switches, chairs non-mouthed toys diaper change pad and area potty chairs washroom area blood spills, vomit, body fluids, fecal contamination
70 to 95% Isopropyl Alcohol	10 minutes Follow manufacturer's instructions	
0.5% Accelerated Hydrogen Peroxide	Follow manufacturer's instructions	
Household Bleach (5.25 % chlorine) Surface disinfecting <ul style="list-style-type: none"> Use 500 ppm of chlorine bleach (approximately 5 ml of chlorine bleach and 500 ml of water or 40 ml of chlorine bleach and 4 litres of water). 	Two minutes	

REMEMBER when using sanitizers and disinfectants:

- All approved disinfectants must have a DIN issued by Health Canada (except for household chlorine bleach).
- Use the correct product for the intended use, and follow manufacturer's instructions.
 - Wet contact times outline the minimum required time an item or surface must remain wet for the disinfectant to work. For example, 70 to 90 percent isopropyl alcohol requires at least 10 minutes wet contact time. The product must be continuously reapplied to the surface so it remains wet for the outlined time period.
- A chlorine calculator can be used to determine how much bleach product to dilute with water to get your desired concentration (ppm) of chlorine solution (see <https://www.publichealthontario.ca/en/Health-Topics/Environmental-Occupational-Health/Water-Quality/Chlorine-Dilution-Calculator> [Public Health Ontario, 2023] and www.foodsafe.ca/dilution-calculator.html [BC FoodSafe, n.d.]).
- If surfaces are visibly dirty, they must first be cleaned prior to sanitizing or disinfecting. Disinfectant and/or sanitizer solutions can be used directly on surfaces that are already clean.
- Use the appropriate PPE, as per manufacturer's instructions.
- Test strips are used to verify the strength of the sanitizing solutions after they have been mixed. Use test kits in accordance with the label instructions. Test kits can be purchased from any restaurant or chemical supply store.
- Ensure that the chemical product has not expired.
- Label bottles or pails with contents.
- Do not mix different chemicals.
- Follow these instructions when using chlorine bleach:
 - Mix chlorine bleach and water; do not mix chlorine bleach with any other chemicals.
 - Make a fresh solution daily, as solution strength can decrease overtime.
 - Do not use scent-added chlorine bleach or chlorine bleach with fabric guard added. These products are for laundry use only.
 - Check the concentration of chlorine bleach solution with the chlorine test kits/papers every time a new bottle is prepared. Chlorine bleach product strengths may vary, depending on the brand used.
- Keep solutions out of reach of children.
- Do NOT spray solution near children.