



Pediatric Settings and Daycare Facility Cleaning and Disinfection Protocol For *Cryptosporidium*

This document has been developed in accordance with current applicable infection control and regulatory guidelines. It is intended for use as a guideline only. At no time should this document replace existing documents established by the facility unless written permission has been obtained from the responsible facility manager.

PREFACE

The overall goal of infection prevention practices is to eliminate the risk of the transmission of pathogens between patients, students or toddlers and between patients, students or toddlers and the health care worker or education provider. The following recommendations should be implemented when cleaning and disinfecting. These procedures follow the Spaulding Classification of the level of care required for surfaces and instruments.

Environmental surfaces and non-critical equipment are surfaces or equipment that comes in contact with intact skin but not mucous membranes. Intact skin acts as an effective barrier to most microorganisms. Within health care settings, examples of non-critical equipment are bedpans, blood pressure cuffs, crutches, and patient care equipment like lifts and monitors while in day care or education settings examples of non-critical equipment would include toys and shared gym equipment.

PREPARATION

Cryptosporidiosis is the parasitic disease caused by *Cryptosporidium*, a protozoan parasite. It affects the intestines of mammals and is typically an acute short-term infection that is spread through the fecal-oral route. The parasite is transmitted by environmentally hardy oocysts, that are resistant to many disinfectants including chlorine and iodine.³ Strict adherence to hand washing techniques and the proper handling of contaminated wastes (including diapers) are effective in preventing the spread of the disease. Environmental surfaces potentially contaminated with *Cryptosporidium* oocysts should be cleaned with an effective disinfectant. Parasites are not covered by efficacy testing generally conducted for disinfectants so you will not find a *Cryptosporidium* claim on products, however higher concentrations of hydrogen peroxide (>3%) have been shown to be effective.⁴

Appropriate personal protection should be taken for those responsible for the decontamination of a room or area.

PROTECTIVE BARRIERS

1. Disposable gloves. Gloves should be changed as required, i.e., when torn, when hands become wet inside the glove or when moving between patient rooms.
2. Household gloves can be worn, but they must be discarded when the cleaning is complete.
3. Protective Eye wear (goggles, face shield or mask with eye protection)
4. Masks (surgical or procedural masks sufficient)
5. Gowns

PRODUCTS

Accelerated Hydrogen Peroxide Surface Disinfectant (sold as 7% Virox 5 Concentrate, Virox 5 Ready-To-Use and/ or Virox 5 Wipes, 7% PerCept Concentrate, PerCept RTU or PerCept Wipes, 7% Accel Surface Cleaner Disinfectant Concentrate) and 0.5% Accelerated Hydrogen Peroxide Tuberculocidal Surface Disinfectant (sold as Accel TB RTU, Accel TB Wipes, Oxivir Tb, Oxivir Tb Wipes, Carpe Diem Tb or Carpe Diem Tb Wipes)

1. Preparation of solution - Pre-mix and label from a controlled location 7% AHP Concentrate at a ratio of 1:16 (0.5% AHP).
2. Place mixed solution in either a labeled - flip top 1Litre bottle or a small hand bucket.



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3. AHP RTU is ready to use (0.5% AHP).
4. AHP Wipes are ready to use (0.5% AHP).

4.5% Accelerated Hydrogen Peroxide Sporicidal Liquid or Wipes (sold as RESCUE Sporicidal Liquid or RESCUE Sporicidal Wipes) for cleaning and disinfection of hard, non-porous surfaces.

PRODUCT GERMICIDAL EFFICACY

All products listed above are based upon Accelerated Hydrogen Peroxide (AHP).

The traditional 0.5% AHP products have a Broad-Spectrum Sanitizing claim against vegetative bacteria, a Bactericidal claim against gram negative and gram positive vegetative bacteria as well as General Virucide Claim against Poliovirus Type 1, Sabin Strain, which includes inactivation of both enveloped and non-enveloped viruses. In addition to the General Virucide Claim, Accelerated Hydrogen Peroxide has been proven to show efficacy against HIV, Human Coronavirus, Human Rhinovirus, Human Rotavirus, Canine Parvovirus, Feline Calicivirus (Norovirus) and the H3N2 strain of Avian Influenza A.

The Tuberculocidal Surface Disinfectants also carry a Fungicidal and Tuberculocidal claim.

The 4.5% AHP Sporicidal Liquid and Wipe products have been proven effective as a 10 minute Sporicide indicating a viable 6 Log reduction against *Bacillus subtilis*, *Clostridium sporogenes* and *Clostridium difficile*.

Based upon this validated efficacy against hardy bacterial endospores and evidence that suggests that higher concentrations of hydrogen peroxide are effective in killing *Cryptosporidium* oocysts, 4.5% AHP Sporicidal Liquid or Wipes are suggested for targeted usage in areas of potential contamination during a *Cryptosporidium* outbreak.

SUMMARY OF PROCEDURES FOR SINGLE INFECTED CHILD

Apply **0.5% AHP Solution** to either surface or to cloth. **Clean** all horizontal surfaces in the room ensuring that the cloth is changed when soiled. Place used cloth in a marked plastic-lined waste receptacle. **Disinfect** all horizontal surface of the room by reapplying the **0.5% AHP Solution** and allowing for a 5-minute contact time.

IT IS HIGHLY RECOMMENDED THAT TOILETS AND DIAPERING AREAS BE CLEANED AND DISINFECTED AFTER EACH USE AND THIS FORMAL 2 STEP PROCEDURE BE CONDUCTED TWICE DAILY IN ALL OTHER AREAS TO ENSURE THE GREATEST DEGREE OF BIOBURDEN REMOVAL.

Similar recommendations are in place for the cleaning and disinfection of environments potentially contaminated with *Clostridium difficile*, another very difficult to kill microorganism. Periodic rinsing of soft surfaces such as vinyl or naugahyde is suggested.

DETAILED HOUSEKEEPING ACTIVITY WITH SINGLE INFECTED CHILD

1. Gather all equipment, cleaning solutions and materials required to clean the room.
2. **WASH** hands and put on gloves prior to cleaning area. Personal protective equipment should be changed if torn or soiled and between patient rooms.
3. Visible or gross soil present and/or blood or body fluid spills must be removed prior to cleaning. [See Protocol for Cleaning & Disinfecting a Blood or Body Fluid spill.]



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4. Clean all furniture, all bathroom fixtures and all high touch areas, knobs, switches, etc. with the **0.5% AHP Solution** ensuring that clean cloths and solutions do not become contaminated (**NO DOUBLE DIPPING**). Allow surfaces to remain wet for 30 seconds to achieve the 30-second Broad-Spectrum Sanitizing claim.
5. Reapply the **0.5% AHP Solution** and allow surfaces to remain wet for the label correct contact time to ensure disinfection.
6. Soiled rags should be placed in a regular plastic bag and then in regular soiled linen bin or the dirty utility room. Take all garbage bags to the appropriate disposal area.
7. Remove and discard gloves, **WASH** hands prior to leaving area.

CLEANING & DISINFECTING TOYS WITH SINGLE INFECTED CHILD

Hard non-porous toys should be cleaned and disinfected routinely. Plush toys should be laundered using detergent and hot water.

1. Gather all equipment, cleaning solutions and materials required to clean the toys.
2. **WASH** hands and put on gloves. Gloves should be changed if torn or soiled.
3. For toys that can be immersed, pour the **0.5% AHP Solution** In a large basin or sink. Remove all visible debris from the surface of the toy and allow the toy to soak for 30-seconds to achieve the sanitizing claim or 5-minutes to achieve disinfection.
4. Remove toys from the **0.5% AHP Solution** and rinse with tap water.
5. For toys that cannot be immersed in the **0.5% AHP Solution**, clean all surfaces of the toy ensuring that clean cloths and solutions do not become contaminated (**NO DOUBLE DIPPING**). Allow surfaces to remain wet for 30 seconds to achieve the 30-second Broad-Spectrum Sanitizing claim.
6. To disinfect the toys reapply the **0.5% AHP Solution** and allow surfaces to remain wet for 5-minutes to achieve the Bactericidal and Virucidal claim.

Note: It is recommended that toys that may be placed in the mouths of toddlers should be rinsed with potable water to remove soap residue.

SUMMARY OF PROCEDURES FOR OUTBREAK

Apply **4.5% AHP Solution** to either surface or to cloth. **Clean** all horizontal surfaces in the room ensuring that the cloth is changed when soiled. Place used cloth in a marked plastic-lined waste receptacle. **Disinfect** all horizontal surface of the room by reapplying the **4.5% AHP Solution** and allowing for a 10-minute contact time.

IT IS HIGHLY RECOMMENDED THAT TOILETS AND DIAPERING AREAS BE CLEANED AND DISINFECTED AFTER EACH USE AND THIS FORMAL 2 STEP PROCEDURE BE CONDUCTED TWICE DAILY IN ALL OTHER AREAS TO ENSURE THE GREATEST DEGREE OF BIOBURDEN REMOVAL.

Similar recommendations are in place for the cleaning and disinfection of environments potentially contaminated with *Clostridium difficile*, another very difficult to kill microorganism. Periodic rinsing of soft surfaces such as vinyl or naugahyde is suggested.



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DETAILED HOUSEKEEPING ACTIVITY DURING OUTBREAK

1. Gather all equipment, cleaning solutions and materials required to clean the room.
2. **WASH** hands and put gloves prior to beginning the cleaning process. Personal protective equipment should be changed if torn or soiled. Gloves and goggles are **REQUIRED** when handling 4.5% AHP Sporicidal Solution.
3. Visible or gross soil present and/or blood or body fluid spills must be removed prior to cleaning. [See Protocol for Cleaning & Disinfecting a Blood or Body Fluid spill.]
4. Clean all furniture, all bathroom fixtures and all high touch areas, knobs, switches, etc. with the **4.5% AHP Sporicidal Liquid or Wipes** ensuring that clean cloths and solutions do not become contaminated (**NO DOUBLE DIPPING**).
5. Reapply the **4.5% AHP Sporicidal Liquid or Wipes** and allow surfaces to remain wet for the 10 min. contact time to ensure disinfection.
6. Soiled rags should be placed in a regular plastic bag and then in regular soiled linen bin or the dirty utility room. Take all garbage bags to the appropriate disposal area.
7. Remove and discard gloves, **WASH** hands prior to leaving room.

CLEANING & DISINFECTING TOYS DURING AN OUTBREAK

Hard non-porous toys should be cleaned and disinfected as they may pose a potential source of contamination. Plush toys should be laundered using detergent and hot water.

1. Gather all equipment, cleaning solutions and materials required to clean the toys.
2. **WASH** hands and put on gloves and goggles. Gloves should be changed if torn or soiled.
3. Clean all surfaces of the toy with **4.5% AHP Sporicidal Liquid or Wipes** ensuring that cloth/wipe is changed when soiled and always using a clean portion of the cloth/wipe when moving to the next area. To disinfect the toys reapply the **4.5% AHP Sporicidal Liquid or Wipes** and allow surfaces to remain wet for 10-minutes.
4. It is recommended that toys be rinsed with potable water after cleaning and disinfection to remove soap residue.

RECOMMENDED PROCEDURES FOR CLEANING & DISINFECTING BLOOD & BODY FLUID SPILLS

Appropriate personal protective equipment should be worn for cleaning up a body fluid spill. Gloves should be worn during the cleaning and disinfecting procedures. If the possibility of splashing exists, the worker should wear a face shield and gown. Personal protective equipment should be changed if torn or soiled, and always removed before leaving the location of the spill, and then wash hands.

1. **WASH** hands and put on gloves.
2. If the possibility of splashing exists, the worker should wear a face shield and gown. Personal protective equipment should be changed if torn or soiled and always removed before leaving the location of the spill.
3. Apply the **AHP Solution** to spill – wait 30 seconds.
4. Blot up the blood with disposable towels. Dispose of paper towel in plastic-lined waste receptacle.



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5. Wipe surface with the **AHP Solution** – wait 10 minutes. Wipe dry with disposable paper towel. Discard paper towel as above.
6. Remove gloves and dispose in plastic-lined waste receptacle.
7. **WASH** hands.

INSTRUCTIONS FOR CONFIRMATORY TESTING OF 7% AHP CONCENTRATED DISINFECTANTS

The Accelerated Hydrogen Peroxide Test Strip (Part No. AHP500) can be used for confirmatory testing of diluted disinfectant products when required by facility protocol. These strips are easy to use dip-and-read reagents strips for a pass or fail determination of the hydrogen peroxide concentration in the 7% AHP Concentrate Surface Disinfectant solution.

1. Remove a test strip and immediately close the container.
2. Dip the test strip into the Diluted AHP solution to be tested for 1-second ensuring that the reaction zone is completely wetted.
3. Remove the test strip and shake of excess liquid.
4. Wait for 120-seconds then compare the reaction zone with the colour scale.

NOTE: The purpose of confirmatory testing is not to extend the shelf life beyond the 30-day claim. Should the test strip show that the Diluted AHP Solution still meets the targeted level of hydrogen peroxide after 30 days the product **MUST** still be disposed to ensure compliance with testing and label claims.

References:

1. Provincial Infectious Diseases Advisory Committee, Best Practices for Cleaning, Disinfection and Sterilization in All Healthcare Settings, 2006
2. Public Health Agency of Canada, Infection Control Guidelines for Hand Washing, Cleaning, Disinfection and Sterilization in Healthcare, Volume 24S8, 1998
3. Florida International University Risk Management & Environmental Health & Safety, Infection Control Guidelines, Revision 2, 2007
4. Public Health Agency of Canada, Material and Safety Data Sheet: *Cryptosporidium parvum* <http://www.phac-aspc.gc.ca/msds-ftss/msds48e-eng.php>