Cleaning and Disinfection Protocol

Cleaning & Disinfection Protocol for Gram-Negative and Gram-Positive Bacteria, including Antibiotic Resistant Bacteria

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

Bacteria are a large domain of single-celled, prokaryote microorganisms. Typically a few micrometres in length, bacteria have a wide range of shapes, ranging from spheres to rods and spirals. The vast majority of the bacteria in the body are rendered harmless by the protective effects of the immune system, and a few are beneficial. However, a few species of bacteria are pathogenic and cause infectious diseases. The mode of transmission for bacteria is characterized by the specific bacteria; however, the most common routes are via indirect or direct contact of infectious particles, contact with or inhalation of respiratory droplets. Some bacteria may also be transmitted by ingestion of contaminated food, sexual contact or maternal-to-newborn transmission. Vegetative Bacteria including antibiotic resistant organisms are easily inactivated by routine surface cleaning and disinfection. At present there is no scientific evidence to show that antibiotic resistance equates to chemical resistance.

The following table provides examples of Gram Negative and Gram Positive Bacteria and Mode of Transmission of concern for Healthcare settings.

Bacteria	Mode of Transmission	Infective Material
Acinetobacter baumannii	Direct or indirect contact	
Bordetella pertussis	Large droplet	Respiratory Secretions
Campylobacter jejuni	Direct and indirect contact (fecal/oral)	Feces
Chlamydia trachomatis	Sexually transmitted; Mother-to-newborn	Genital Secretions
Corynebacterium diphtheriae	Direct and indirect contact	Lesion drainage
Escherichia coli	Direct and indirect contact (fecal/oral)	Feces
Klebsiella pneumoniae	Direct and indirect contact (fecal/oral)	Feces
Listeria monocytongenes	Food borne; Mother-to fetus or newborn	Contaminated Food
Neisseria meningitidis	Large droplet; Direct contact	Respiratory Secretions
Methicillin Resistant *S. Aureus (MRSA)*	Direct or indirect contact	Drainage; Skin exudates
Pseudomonas aeruginosa	Direct or indirect contact	

2770 Coventry Road
Oakville, Ontario L6H 6R1
Tel: 1-800-387-7578 Fax: (905)813-0220
www.infectionpreventionresource.com

Cleaning and Disinfection Protocol

Cleaning & Disinfection Protocol for Gram-Negative and Gram-Positive Bacteria, including Antibiotic Resistant Bacteria

Salmonella spp.	Contact (fecal/oral); Food borne	Feces
Shigella	Direct and indirect contact (fecal/oral)	Feces
Staphylococcus aureus	Direct or indirect contact	Drainage; Skin exudates
Streptococcus pyogenes	Direct and indirect contact	Drainage; Skin exudates
Streptococcus pneumoniae	Micro-aerosol droplet	
Treponema pallidum	Sexual; Mother-to-fetus or Newborn	Genital secretions; lesion exudates
Vancomycin- Resistant *Enterococcus* (VRE)	Direct or indirect contact	Infected or colonized secretions; excretions
Vibrio cholerae	Direct and indirect contact (fecal/oral)	Feces

PREPARATION

Transmission of vegetative bacteria can be attributed to direct and indirect contact and contact with or inhalation of respiratory droplets. Some bacteria may also be transmitted by ingestion of contaminated food, sexual contact or maternal-to-newborn transmission. Appropriate personal protection should be taken for those responsible for the decontamination of a room or area. Appropriate bio-security practices should be applied, including limiting the amount of aerosols generated and disturbance to dust / soil in the area to be cleaned and disinfected.

PROTECTIVE BARRIERS

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

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 areas.
2. Protective Eye wear (goggles, face shield or mask with eye protection) as needed
3. Masks (surgical or procedural masks sufficient) as needed
4. Gowns

PRODUCTS

All disinfectant or disinfect-cleaner products to be used for cleaning and disinfection of environmental surfaces and patient care equipment must be approved by the Environmental Protective Agency

2770 Coventry Road
Oakville, Ontario L6H 6R1
Tel: 1-800-387-7578 Fax: (905)813-0220
www.infectionpreventionresource.com

Cleaning & Disinfection Protocol for Gram-Negative and Gram-Positive Bacteria, including Antibiotic Resistant Bacteria

(EPA)/Health Canada and carry an EPA/ Drug Identification Number (DIN). Products claiming to be a disinfectant but do not carry an EPA number/DIN have not been approved for sale in the US or Canada and should not be used. A Hospital Grade Disinfectant product denotes that the product has been proven efficacious against the three main surrogate bacteria designated by the EPA/Health Canada for Bactericidal activity; *Staphylococcus aureus, Pseudomonas aeruginosa* and *Salmonella enterica* (formerly known as *Salmonella choleraesuis*). While many DIN registered products will also carry claims against Antibiotic Resistant Organisms (ARO's) such as Methicillin-resistant *Staphylococcus aureus* (MRSA) or Vancomycin-resistant *enterococci* (VRE), it is important to understand that resistance to Antibiotics does not equate to chemical resistance.

Disinfectant Chemistries Approved for Disinfection of Environmental Surfaces & Patient Care Equipment include:

1. Accelerated Hydrogen Peroxide®(AHP®)
2. Sodium Hypochlorite
3. Quaternary Ammonium Compounds
4. Alcohol
5. Phenolics

The concentration and contact time for each product will differ. For that reason it is important to read the product label prior to commencing any cleaning and disinfection process.

RECOMMENDED PROCEDURES FOR CLEANING AND DISINFECTION

Summary of Procedure:
Apply the solution to either the surface or device surface or to cloth. If using a Two-Step Cleaner/Disinfectant, clean all horizontal surfaces in the room ensuring that the cloth is changed when soiled. Appropriately dispose of cloth. If using a One-Step Cleaner/Disinfectant, there is no need to pre-clean all horizontal surfaces unless visibly soiled. Allow surfaces to air dry or wipe dry if surfaces are still wet after the contact time as been achieved. Periodic rinsing of soft surfaces such as vinyl or naugahyde is suggested as well as equipment regularly handled by hand.

1. Gather all equipment, cleaning solutions and materials required to clean the environmental surfaces.
2. Wash hands and put gloves prior to cleaning the surface. Personal protective equipment should be changed if torn or soiled.
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. As appropriate, clean all high touch clinical contact and housekeeping surfaces. To ensure that cross contamination does not occur, use clean cloths for each surface being cleaned. If using an open bucket system, ensure that solutions do not become contaminated (NO DOUBLE

2770 Coventry Road
Oakville, Ontario L6H 6R1
Tel: 1-800-387-7578 Fax: (905)813-0220
www.infectionpreventionresource.com

Cleaning & Disinfection Protocol for Gram-Negative and Gram-Positive Bacteria, including Antibiotic Resistant Bacteria

DIPPING). If using a disposable wipe system, ensure that a new wipe is being used for each surface being cleaned.

5. To disinfect environmental surfaces, apply the disinfectant and allow surfaces to remain wet for the appropriate contact time as specified on the product label.
6. If using a One-Step Cleaning-Disinfecting Solution a separate cleaning step is not necessary unless the surfaces are visibly soiled. To ensure disinfection occurs, the cleaner-disinfectant solution may need to be applied multiple times in order to achieve the contact time as specified on the product label.
7. Soiled rags should be placed in a bag for laundering. Disposable cloths should be disposed as regular waste in garbage bags or as specified on the product label.
8. Remove and discard gloves, wash hands.

RECOMMENDED PROCEDURES FOR CLEANING AND DISINFECTION OF BLOOD AND BODY FLUIDS

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. For large spills, overalls, gowns or aprons as well as boots or protective shoe covers should be worn. Personal protective equipment should be changed if torn or soiled, 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. For large spills, overalls, gowns or aprons as well as boots or protective shoe covers should be worn. Personal protective equipment should be changed if torn or soiled and always removed before leaving the location of the spill.
3. Apply the disinfectant solution to spill – wait until the contact time has achieved.
4. Blot up the blood with disposable towels. Dispose of paper towel in plastic-lined waste receptacle.
5. Spray or wipe surface with the disinfectant solution – ensure the appropriate contact time is achieved. Wipe dry with disposable paper towel. Discard paper towel as above.
6. Remove gloves and dispose in plastic-lined waste receptacle.
7. Wash hands.

2770 Coventry Road
Oakville, Ontario L6H 6R1
Tel: 1-800-387-7578 Fax: (905)813-0220
www.infectionpreventionresource.com

Cleaning and Disinfection Protocol

Cleaning & Disinfection Protocol for Gram-Negative and Gram-Positive Bacteria, including Antibiotic Resistant Bacteria

DISPOSAL OF INFECTIOUS MATERIAL

All cleaning cloths gloves and handled tools used for the decontamination of suspected infectious diseases must be placed in a clearly marked plastic lined waste receptacle. Decontaminate all wastes before disposal; steam sterilization, chemical disinfection and or incineration.

REFERENCES

APIC, Ready Reference To Microbes, 2002

Best Practices for Cleaning, Disinfection and Sterilization in All Health Care Settings, Provincial Infectious Diseases Advisory Committee (PIDAC), May 2013

Best Practices for Environmental Cleaning for Prevention and Control of Infections in All Health Care Settings, PIDAC, May 2012

Guidelines for Environmental Infection Control in Healthcare Facilities, CDC. MMWR June 2003, Vol 52, No RR-10

Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, HICPAC, 2007

Rutala WA & Weber DJ. The benefits of surface disinfection. AJIC 2004;32(4) 226-229

Mayhall CG. Hospital Epidemiology and Infection Control, 3rd Ed. Philadelphia. Lippincott Williams & Wilkins, 2004

2770 Coventry Road
Oakville, Ontario L6H 6R1
Tel: 1-800-387-7578 Fax: (905)813-0220
www.infectionpreventionresource.com