Cleaning and Disinfection of Non-Critical Multi-Use Device/Equipment

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Introduction

Non-critical multi-use devices and equipment used within the Simcoe Muskoka District Health Unit (SMDHU) (i.e. sensory toys, stethoscopes, blood pressure cuffs, baby weigh scales or demonstration tools) are defined as fomites which are inanimate objects in the environment that may become contaminated with microorganisms and serve as vehicles of disease transmission. Non-critical devices/equipment is an item that either touches intact skin (but not mucous membranes) or does not directly touch the client. Reusing non-critical devices/equipment involves cleaning and may also require low-level disinfection before and after each client and/or staff use.

Purpose

The purpose of this policy is to ensure that staff members are aware of the proper cleaning and disinfecting procedures for all non-critical multi-use devices/equipment, to reduce occupational exposures to infectious diseases and to prevent the transmission of microorganisms from staff to client, client to client, staff to staff, and client to staff during service delivery.

Employers are required under the *Occupational Health and Safety Act, R.S.O. 1990 Chapter O.1* to provide information, instruction and supervision to a worker to protect the health or safety of the worker. In addition, the SMDHU has a duty to prevent infectious disease transmission between staff and/or clients by verifying that any device or equipment used in the provision of care to a client is capable of being cleaned or disinfected according to the most current standards and guidelines from the Canadian Standards Association (CSA), the Public Health Agency of Canada (PHAC)/Health Canada as well as the Provincial Infectious Disease Advisory Committee (PIDAC).

Legislative Authority

Occupational Health and Safety Act, R.S.O 1990

Policy Definitions and Interpretation

Client: Individual, family, community group, agency, business or premise, coalition or community network, professional group, population or any other entity who receive care and/or service by a health unit employee, student or intern.

Cleaning: The physical removal of foreign material (e.g. dust, soil) and organic material (e.g. blood, secretions, excretions, microorganisms).Cleaning physically removes rather than kills microorganisms. It is accomplished with water, detergents and mechanical friction. Thorough cleaning is required before a device/equipment can be disinfected, as organic material may inactivate a disinfectant.

Contact Time: The defined time for which surfaces of the device/equipment are exposed to a chemical or thermal disinfection process to achieve the appropriate level of disinfection.

Detergent: A synthetic cleansing agent that can emulsify oil and suspend soil. A detergent contains surfactants that do not precipitate in hard water and may also contain protease enzymes.

Disinfection: The inactivation of disease-producing microorganisms. Disinfection does not destroy bacterial spores. Devices/equipment must be cleaned thoroughly before effective disinfection can take place. Disinfectants are used to disinfect and can be combined with a cleaning agent as a cleaner-disinfector.

Disinfectant: A product that is used on a surface or device/equipment which results in disinfection of the surface or device/equipment. Disinfectants are applied only to inanimate objects. Some products combine a cleaner with a disinfectant. Disinfectants rapidly kill or inactivate most infectious agents. Disinfectants are used to disinfect and must not be used as general cleaning agents, unless combined with a cleaning agent as a cleaner-disinfector. Skin antiseptics must never be used as environmental disinfectants (e.g. ABHR)

Drug Identification Number (DIN): In Canada, disinfectants are regulated as drugs under the Food and Drugs Act and Regulations. Disinfectant manufacturers must obtain a drug identification number (DIN) from Health Canada prior to marketing, which ensures that labeling and supporting data have been provided and that it has undergone and passed a review of its formulation, labeling and instructions for use.

Fomites: Objects in the inanimate environment that may become contaminated with microorganisms and serve as vehicles of transmission. (e.g. desks, phones, sensory toy's).

High-Touch Surfaces: High-touch surfaces are those that have frequent contact with hands. Examples desk tops, toys, scales, blood pressure cuffs, light switches, and wall areas around the toilet.

Hydrogen Peroxide Enhanced Action Formulation (HP-EAF): A formulation of hydrogen peroxide that contains surfactants, wetting agents and chelating agents. The resulting synergy makes it a powerful oxidizer that can rapidly achieve broad-spectrum disinfection.

Low-Level Disinfectant: A chemical agent that achieves low-level disinfection when applied to surfaces or items in the environment.

Low-Level Disinfection (LLD): Level of disinfection required when processing non-invasive device/equipment and environmental surfaces.

Manager/Supervisor: Is the person to whom a staff member directly reports. Staff may report to a manager, supervisor, director or Medical Officer of Health.

Material Safety Data Sheets (MSDS): A Material Safety Data Sheet (MSDS) is a document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the chemical product. It also contains information on the use, storage, handling and emergency procedures all related to the hazards of the material. The MSDS is prepared by the supplier or manufacturer of the material. It is intended to tell the

user what the hazards of the product are, how to use the product safely, what to expect if the recommendations are not followed, what to do if accidents occur, how to recognize symptoms of overexposure, and what to do if such incidents occur.

Non-critical Multi Use Device/equipment: Device/equipment that either touches only intact skin (but not mucous membranes) or does not directly touch the client. Non–critical medical Device/equipment will also fall under this definition and are any instrument, apparatus, appliance, material, or other article, whether used alone or in combination, intended by the manufacturer to be used for human beings for the purpose of diagnosis, prevention, monitoring, treatment or alleviation of disease, injury or handicap; investigation, replacement, or modification of the anatomy or of a physiological process; or control of conception.

Personal Protective Equipment (PPE): Clothing or equipment worn for protection against hazards. Consists of gowns, gloves, masks, facial protection (i.e., mask and eye protection, face shields or mask with visor attached) or respirators that can be used by staff to provide a barrier that will prevent potential exposure to infectious microorganisms or when handling cleaners or disinfectants.

Routine Practices: The system of infection prevention and control practices recommended by the Public Health Agency of Canada to be used with all clients during all care to prevent and control transmission of microorganisms in all health care settings. HS0118 Infection Prevention and Control: Routine Practices and Additional Precautions

Single Client Use: A term given to medical devices/equipment that may be used on a single client and may be re-used on the same client, but may not be used on other clients.

Single-use Disposable: A term given to devices/equipment designated by the manufacturer as single-use only. Single-use devices/equipment must not be reprocessed and reused.

Staff: All individuals employed by or working for the Simcoe Muskoka District Health Unit including full-time, part time, casual and contracted personnel; volunteers, students and members of the Board of Health.

Policy

In accordance with existing infection prevention and control policies and procedures, the SMDHU will implement and maintain processes to ensure all non-critical multi-use devices/equipment are routinely cleaned and disinfected before and after each client or staff use. Cleaning and disinfection of all devices and equipment is a shared responsibility of all staff.

Procedures

Note: The term device/equipment will be used to describe all non-critical multi-use devices/equipment at this point within the document.

A. Recommendations for choosing devices/equipment, or cleaners and disinfectants.

1. When considering the purchase of a new device/equipment, educational tool or display within a service area or program within the SMDHU; review the recommendations set out in Appendix A: Recommendations Before Purchasing

2. When considering the purchase of a new disinfectant or cleaner to be used on a new or already purchased device/equipment within the SMDHU; review the recommendations set out in Appendix A: Recommendations Before Purchasing

B. Cleaning Schedules and Decision Charts for Manager/Supervisor

1. The manager/supervisor will ensure a list is compiled of all devices/equipment used within their programs or service areas and create a standardized cleaning and disinfection schedule following manufacture's recommendations in consultation with the Infection Prevention and Control Coordinator. Appendix B: Cleaning Schedule

2. The manager/supervisor will ensure instructions are provided on how each device/equipment is to be cleaned or disinfected using manufacture's recommendations/instructions and in consultation with the Infection Prevention and Control Coordinator. Appendix C: Cleaning and Disinfection Decision Chart for Non-critical Device/equipment

3. The manager/supervisor will ensure staff is trained on how to clean and disinfect the device/equipment used within each service area or program.

4. The manager/supervisor will advise staff of the standardized cleaning and disinfection schedules for each device/equipment that they are responsible to use within their service area or program.

5. The manager/supervisor will inform staff about the risks of using any products used to clean and disinfect. MSDS will be made available for staff to indicate hazards of use and how to protect themselves from these hazards.

C. Cleaning and Disinfection Procedures

1. Conduct hand hygiene using alcohol based hand rub (ABHR) or hand washing with soap and water for 15 seconds before and after handling any device/equipment. HS120 Hand Hygiene Policy

2. Promote hand hygiene with all clients using alcohol based hand rub (ABHR) or hand washing with soap and water for 15 seconds before and after they handle a device/equipment.

3. Follow standardized cleaning and disinfection procedures as per manufacturer's instructions, or program specific procedures for the specific device/equipment.

4. Follow standardized cleaning and disinfection schedules for each device/equipment used within the service area or program.

5. Any device/equipment that is used by a staff member or client shall be clean or clean and disinfected prior to it being used. Programs will have mechanisms in place (i.e. sign off sheets) that will allow staff to track when a device was cleaned. If in doubt or there is visible soil on the device/equipment the staff member will clean or clean and disinfect the device/equipment prior to use.

6. After the client or staff member has used the device/equipment the staff member is responsible to clean or clean and disinfect the device/equipment at the point of care if possible (i.e. school, client's home, clinic setting) as per manufacturer's instructions or program specific instructions on the device/equipment.

7. Inspect device/equipment for damage such as cracks on the surface that might prevent the item from being properly cleaned and/or disinfected.

8. Inform your manager/supervisor if a device/equipment is damaged. Remove the item from being used by a client or staff for repair, replacement or disposal.

9. When manufacturer's instructions indicate that a ready to use cleaner/disinfectant wipe can be used on the device/equipment at the point of care:
    a. Conduct a Risk Assessment (RA) and adhere to Routine Practices when cleaning and disinfecting the device/equipment. HS0118 Infection Prevention and Control: Routine Practices and Additional Precautions
    b. Conduct Hand Hygiene prior to cleaning and disinfecting the device/equipment using alcohol based hand rub (ABHR) or hand washing with soap and warm running water for 15 seconds. HS0120 Hand Hygiene Policy
    c. Wear gloves when cleaning and disinfecting a device /equipment to protect hands from harsh cleaners or disinfectant if indicated on the MSDS.
    d. Put on personal protective equipment (PPE) if a RA indicates there is a risk of splashes or sprays while cleaning and/or disinfecting a device/equipment. HS0118 Infection Prevention and Control: Routine Practices and Additional Precautions

e. When cleaning/wiping the device/equipment use friction/pressure to remove dirt, debris or filth from the device/equipment.

f. Follow the recommended contact time and make sure that the device/equipment is wet with the product to ensure that the contact time is maintained.

g. Allow the product to air dry on the device/equipment. Do not wipe dry to allow for the appropriate contact time to be followed before using the device/equipment.

h. Dispose of used cleaner/disinfectant wipes in the garbage.

i. Remove PPE once cleaning and disinfection of the device/equipment has been completed and conduct hand hygiene

10. If the manufacturer states the device/equipment cannot be cleaned and disinfected with a ready to use cleaner/disinfectant wipe or the device/equipment is too large.

    a. The dirty device/equipment shall be stored away from all other clean devices/equipment to prevent cross contamination and be transported back to a SMDHU office for cleaning or cleaning and disinfection.

    b. Store and transport dirty devices/equipment "if tolerated" in a tightly sealed puncture proof plastic container in water or an approved cleaner to prevent organic matter from drying on the surface of the device/equipment.

    c. The container used for storing and transporting dirty devices/equipment will be labeled "DIRTY".

    d. Prior to cleaning and disinfecting any device/equipment conduct a RA and adhere to Routine Practices when cleaning and disinfecting device/ equipment. HS0118 Infection Prevention and Control: Routine Practices and Additional Precautions

    e. Conduct Hand Hygiene prior to cleaning and disinfecting the device/equipment using alcohol based hand rub (ABHR) or hand washing with soap and warm running water for 15 seconds. HS0120 Policy Hand Hygiene

    f. Wear gloves designed for protecting the hands from chemicals, cleaners, or disinfectants when cleaning and disinfecting a device/equipment to protect hands from harsh detergents or disinfectant if indicated on the MSDS.

    g. Put on personal protective equipment (PPE) if a RA indicates there is a risk of splashes or sprays while cleaning and/or disinfecting a device/equipment. HS0118 Infection Prevention and Control: Routine Practices and Additional Precautions

11. Clean instruments:

    - Follow dilution strengths for detergents or cleaner- disinfectants following manufacturer's instructions.
    - First fill a sink designated for cleaning or cleaning and disinfection with warm water and follow dilution strengths for detergents or cleaner- disinfectants. Staff can use a measuring cup to help measure the appropriate amount of product to be diluted with water.

- Always add detergents or cleaner-disinfectants to water and ensure that the product is added gently to water to prevent splashes and sprays.
- Do not use spray bottles for applying cleaner/disinfectant directly onto devices/equipment as this will aerosolize the product. Pouring product onto a cloth or into a sink with water is safe practice.
- Dismantle any devices/equipment that has parts to ensure each part is thoroughly cleaned and or disinfected.
- Use a brush to clean any crevices, seams or hinges on the device/equipment. It is important that an item or surface be free from visible soil and other items that might interfere with the action of the disinfectant, such as adhesive products, before a disinfectant is applied, or the disinfectant will not work. Most disinfectants lose their effectiveness rapidly in the presence of organic matter.

12. Thoroughly rinse each item with clean, warm running water to remove any soap residue as disinfectants can be inactivated by proteins or cleaners.

13. Disinfection
    - If only one sink is available for cleaning and disinfection, rinse sink used for cleaning of any detergent residue and fill sink with clean warm water as per dilution instructions.
    - Add disinfectant to water following manufacture's dilution instructions. Use a measuring cup to help measure disinfectants.
    - Follow manufacturer's instructions for contact times to allow the disinfectant enough time to disinfect the device/equipment.
    - Let device/equipment air dry before storing

14. Clean and disinfect the cleaning tools, brushes, gloves and sink after use.

15. Store products such as detergents and disinfectants in a cool, dry, dark place.

16. Remove PPE once cleaning and disinfection of the device/equipment has been completed and conduct hand hygiene.

17. Store clean devices/equipment in a clean and dry storage area. A sealed cupboard or container is ideal to prevent cross contamination with dirty devices/equipment.

18. Each SMDHU office should have a designated area to allow staff to clean or clean and disinfect devices/equipment.

19. The area where dirty devices/equipment is to be cleaned must not cross contaminate into an area where clean equipment or food is stored. This may be a work area that is physically separated from clean areas and other work areas by walls or partitions to control traffic flow and to contain contaminants generated during the stages of cleaning and disinfection.

20. If the device/equipment is required to be soaked, the sink used for this process:

    - shall be designed and arranged to facilitate soaking, washing and rinsing of the device/equipment with minimal movement or delay between steps.
    - should be adjacent to waterproof counter tops and a backsplash.
    - shall not have an overflow.
    - should be at a height that allows workers to use them without bending or straining.
    - should be large enough to accommodate trays or baskets of instruments.
    - should be deep enough to allow complete immersion of larger devices and instruments so that aerosols are not generated during cleaning.

21. Instructions for decanting of disinfectants from concentrates:
    - Never decant concentrated disinfectants into an unlabeled container. All containers used to transport decanted concentrated or diluted disinfectants must be properly labeled following the MSDS.
    - Always wear PPE if indicated in the MSDS when decanting from the original container
    - Conducted in a well-ventilated area.
    - Follow manufacture's instruction for diluting disinfectants and make solutions for immediate use only as diluted disinfectants will decrease in strength over time.
    - Dispose of diluted disinfectants as indicated in the MSDS.

22. Wipe electronic devices/equipment thoroughly including all cables. Avoid wiping any electrical or electronic connectors to prevent malfunction. Use a 70 % Isopropyl Alcohol or a commercial LCD screen cleaner such as Equip Wipes. Do not use Hydrogen Peroxide Enhanced Action Formulation on LCD screens.

Related Policies

HS0118 Infection Prevention and Control: Routine Practices and Additional Precautions

D7.518 Clinical Services Oral health Policy and Procedure: Sterilization, Disinfection and Cleaning

HS0120 Hand Hygiene

Final Approval Signature: _____

Review/Revision History:

Appendix A: Recommendations Before Purchasing

A. Choosing devices/equipment

1. When choosing a new device/equipment consultation will need to occur with Infection Prevention and Control to ensure that the device is suitable for adequate cleaning and disinfection.
2. To ensure the device/equipment meets with best practices for cleaning and disinfection the following criteria will be met before purchasing the device/equipment.

    - Choose finishes, furnishings, surfaces, devices and equipment that can be easily cleaned and disinfected. (i.e. hard, non-porous, minimal seams and crevices)
    - Choose devices/equipment that has surfaces that can be cleaned and disinfected with an approved SMDHU cleaning and disinfecting products. See Figure 1 : Agency Disinfectants
    - If the cleaning and disinfection products to be used are not already approved by the SMDHU then approval for the product must be obtained in consultation with Infection Prevention and Control and Human Resources.
    - Information from the manufacturer on how to identify when items can no longer be cleaned due to damage of surfaces on device/equipment.
    - Written item-specific manufacturer's cleaning and disinfection instructions.
    - If disassembly or reassembly is required, detailed instructions with pictures must be included.
    - Written item-specific manufactures information on the cleaning and disinfection products approved to be used on the device/equipment as to not void the warranty or destroy the device/equipment.
    - Written manufacturer procedures and training if available on the cleaning and disinfection processes as well as disassembly and reassembly of items before the device/equipment is placed into circulation.

B. Choosing Cleaning Agents and Detergents

Cleaning products used within the Agency:

1. Cleaning products must be approved by Human Resources and Infrastructure/Facilities and Infection Prevention and Control.
2. Must have a Drug Identification Number (DIN) from Health Canada (http://www.hc-sc.gc.ca/dhp-mps/prodpharma/databasdon/index-eng.php) if the cleaner also contains a disinfectant.
3. Must be used according to the manufacturers' recommendations for dilution, temperature, and water hardness.
4. Must be used according to the product's Material Safety Data Sheet (MSDS).

C. Choosing a Disinfectant

Disinfectant products used within the Agency:

1. Disinfectants must be approved in consultation with Human Resources and Infrastructure/Facilities and Infection Prevention and Control.
2. Must have a drug identification number (DIN) from Health Canada (http://www.hc-sc.gc.ca/dhp-mps/prodpharma/databasdon/index-eng.php); in the case of alcohols, the product must have a natural product number (NPN).
3. Must be used according to the manufacturers' recommendations for dilution, temperature, water hardness and contact time.
4. Must be used according to the product's Material Safety Data Sheet (MSDS).

Occupational health considerations: Many surface disinfectants contain quaternary ammonium compounds (QUATs), phenolic, hydrogen peroxide or sodium hypochlorite which can cause skin and respiratory irritation. Disinfectants can be an allergen to staff so choose products that are non-toxic and not irritating.

D. Disinfectant Wipes

Disinfectant wipes can be used by staff to clean and disinfect devices/equipment in one step. When using disinfectant wipes:

1. The active ingredient must be appropriate to reduce the amount of microorganisms that the device/equipment may come in contact with.
2. Wipes in a container must be kept wet and discarded if they become dry.
3. Wipes must have an MSDS and be used according to the MSDS (e.g., wear gloves when handling, if recommended).
4. Disinfectant wipes are used for device/equipment/surfaces that will not tolerate soaking and small items that must be disinfected between each client at the point of care (e.g., stethoscope).
5. If using these wipes for disinfection of large pieces of equipment, multiple wipes are required to allow for the appropriate contact time as the device must stay wet with the product to reach the appropriate contact time.

Appendix B: Cleaning Schedule

Item Non critical device or equipment	**Cleaner /Disinfectant** Product to be used	**Schedule** i.e. after each client

Appendix C: Cleaning and Disinfection Decision Chart for Non-critical devices/equipment

The following chart relates to non-critical devices/equipment only, i.e., equipment that comes into contact with intact skin.

Level of Cleaning and Disinfection	**Classification of Device/Equipment**	**Effective Products**
Cleaning Physical removal of soil, dust or foreign material. Cleaning usually involves soap and water, detergents or enzymatic cleaners. Thorough cleaning is required before disinfection or sterilization may take place.	Reusable devices equipment	Concentration and contact time are dependent on manufacturer's instructions • Quaternary ammonium compounds (QUATs) • Enzymatic cleaners • Soap and water • Detergents • 0.5% Hydrogen peroxide enhanced action formulation (HP-EAF)
Low-Level Disinfection Level of disinfection required when processing noncritical devices/equipment or some environmental surfaces. Low-level disinfectants kill most vegetative bacteria and some fungi as well as enveloped (lipid) viruses. Low-level disinfectants do not kill mycobacteria or bacterial spores.	Non-critical devices equipment	Concentration and contact time are dependent on manufacturer's instructions • 3% Hydrogen peroxide (30 minutes) • 70-95% Alcohol (10 minutes) • Sodium hypochlorite (bleach) (1000 ppm) • 0.5% Hydrogen peroxide enhanced action formulation (HP-EAF) (5 minutes) • Quaternary ammonium compounds (QUATs)

Figure 1: Agency Approved Disinfectants

Cleaner: • Equip Wipes: ✓ Used as a cleaner for all electronic monitors **Quaternary Ammonium Compounds (QUATs)** • Lysol Wipes: ✓ 10 minute contact time: broad-spectrum sanitizer	**Alcohol** • 70% Alcohol Wipes ✓ 10 minute contact time ✓ bactericidal, tuberculocide, and virucidal (enveloped viruses only not non-enveloped viruses)
Hydrogen Peroxide Enhanced Action Formulation • Accel Tb Disinfectant Wipes: ✓ 5 minute contact time: virucidal, bactericide, tuberculocide ✓ 30 seconds: broad spectrum sanitizer • Optim 33 TB Surface Cleaner & Intermediate Level Disinfectant Wipes: ✓ 1 minute contact time: virucidal, bactericidal, tuberculocide ✓ 30 seconds: broad-spectrum sanitizer	**Chlorhexidine Gluconate** • BioVAC: ✓ 5 minute contact time: bactericidal, fungicidal **Ethanol/Chlorhexidine Gluconate** • Lines ✓ Once a week: bactericidal
Propylene Glycol • 50% Propylene Glycol ✓ bactericidal, fungicidal	