## PATIENT CARE OBJECTIVES

To aid in providing an environment and equipment that is microbiologically safe for patients, staff, and visitors.

## RESPONSIBILITIES

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| JHH Employee | Follow the cleaning and disinfection policy.<br><br>Choose an appropriate agent from the approved list of cleaners and disinfectants. |
| Supervisor/Department Management | Ensure employee compliance with this policy.<br><br>Contact the Department of Hospital Epidemiology and Infection Control to seek approval of new products. |
| Department of Hospital Epidemiology Infection Control | Review Hospital policies and procedures and and products utilized for cleaning and disinfection.<br><br>Submit policies to Hospital Epidemiology and Infection Control Committee for review and approval. |
| Health, Safety and Environment | Consult on spill clean-up, ortho-phthaldehyde use and dermatologic reactions to cleaning and disinfection products. |
| Environmental Services | Maintain adequate supply of approved cleaning/ disinfection agents and assist with large blood spills. |

## REFERENCES


Block SS (ed)., Disinfection, Sterilization, and Preservation,. 4th ed. Philadelphia: Lea and Febiger, 1991.

CDC Hospital Infection Control Practices Advisory Committee, "Guideline for Prevention of Nosocomial Pneumonia - Part I and II", AJIC Am J Infect Control, 1994; 22: 247-292.



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Martin, MA and Reichelderfer, M, "APIC Guideline for Infection Prevention and Control in Flexible Endoscopy", AJIC Am J Infect Control, 1994; 22:19-38.

Rutala, WA. (ed), "Guideline for Selection and Use of Disinfectants", AJIC Am J Infect Control, 1996; 24: 313-342.

Rutala, WA and Weber, DJ, "Disinfection of Endoscopes: Review of New Chemical Sterilants Used for High-Level Disinfection", Infect Infect Control Hosp Epidemiol, 1999; 20: 69-76.

## PROCEDURES

**Step One**
Select the appropriate level of disinfectant for the cleaning/disinfection to be performed from the list below:

**Step Two**
Select the appropriate product approved by the Hospital Epidemiology and Infection Control Committee for use at the Johns Hopkins Hospital from the following list. [NOTE: Use of another agent that is not listed below, must be pre-approved in writing by the Department of Hospital Epidemiology and Infection Control (HEIC).]

Detergents
- General purpose powdered detergent concentrate
- Scouring powder
- General purpose liquid detergent

Low Level Disinfectants – General hospital cleaners, which can be used for cleaning beds and other furnishings.
- Quaternary ammonium chloride compounds (such as AirX 109 ®)
- Quaternary ammonium chloride compounds (such as AirX 44 HBV®)
  - This product is unable to kill tuberculosis and so it can not be considered a high level disinfectant.
  - It is effective against HBV and so can be used for blood spills.
  - This product will be used in operative suites and certain procedure areas.

Intermediate Level Disinfectants.
- Bleach – Household strength (such as Clorox ®) – used to clean equipment from patient rooms and isolation rooms. and blood spills
  [Note: Sodium hypo-chlorite (household bleach) 0.05% = 1:50 dilution bleach water
  - Mix 1 oz. bleach in 49 oz. water.
  - Label 1:50 dilution strength and expiration date (one month from date mixed)
  - Containers must be opaque and should be kept closed.
  - *Other concentrations (3:64 or 1:10) of bleach are also acceptable.
- Ethyl or Isopropyl Alcohol - 70%
- HTH (calcium hypo-chlorite solution; Rehabilitation Medicine Dept. only)
- Hydrogen peroxide
- Phenolic disinfectants (such as Lysol®)
  [NOTE: Written approval required from HEIC prior to use)

High Level Disinfectants – used for cold processing of scopes and other instruments which come into contact with mucus membranes
- Ortho-phthaldehyde (such as Cidex OPA®)
- Gluteraldehyde (Cidex®) will no longer be allowed at this institution.

**Step Three**

Mix and use appropriately as follows:

- Directions for Quaternary Ammonium Chloride products (such as AirX 109®)
  - dilute in a 1:256 ratio (1/2 oz to 1 gallon water) or according to label.
  - discard after 24 hours.
  - change solutions frequently. (An example is "after cleaning each patient room." Always replace cleaning cloth whenever the solution is changed.)
  - remove gross debris prior to application of the product.
  - wet entire surface to be cleaned and let area remain wet and air dry for 10 minutes.
  - wipe off with a clean cloth or mop.
  - dispose of used germicidal solution into an appropriate drain. (Appropriate drains are hoppers, toilets or mop sinks.)

- Direction for Bleach - To make Sodium hypo-chlorite (household bleach) 0.05% solution equal to a bleach water solution of 1:50 dilution
  - Mix 1 oz. bleach in 49 oz. water.
  - Label 1:50 dilution strength and expiration date (one month from date mixed).
  - Use an opaque container and keep it closed.
  - Remove gross debris prior to the application of the product.

    Surfaces contaminated with large quantities of blood –

    place a drape or paper towel over the contaminated area
    spray or pour solution over the paper covering the area
    let stand 10 minutes
    remove and discard the drape/paper towel in red plastic bag
    (proceed to as follows)

  - Wet the entire surface to be cleaned and let stand for 10 minutes
  - Wipe the surface with a clean cloth or mop.
  - Dispose of used germicidal solution into an appropriate drain. (Appropriate drains are hoppers, toilets or mop sinks.)

- Directions for Cidex OPA® Storage/Testing/Protection

  NOTE: CIDEX OPA®, (ortho-phthalaldehyde) use:
  Will be approved by Hospital Epidemiology and Infection Control;
  Will be approved only for high level disinfection where other methods are not feasible.

Storage

- Store in-use CIDEX OPA® in a covered container at room temperature
- Label container with:
  - contents
  - date Cidex OPA®, is poured out of its original container and placed into a secondary container for use
  - associated hazards (irritant, do not spray or ingest)

Testing

- Use test kit specified for **Cidex OPA**®, to test for effective concentration **daily** beginning on the first day of use
- Record results in a log-book maintained by the department.
- Discard **Cidex OPA**®, after 14 days of use or earlier if test results show concentration has decreased to an ineffective level. (Minimum Effective Concentration as indicated by test strips is 0.3%)

Discarding

- For the disposal of Cidex OPA®, contact the Department of Health, Safety and Environment at 5-5918.

Protection

- Don:
  Nitrile (PURPLE) gloves (change every 10 –15 minutes),
  Fluid resistant gown or apron, and
  Safety glasses with side shields
- Avoid contact with eyes and skin.

High Level Disinfection Guidelines

Clean equipment for disinfecting:

- Soak instruments in enzymatic cleaner (to break down/loosen protein materials).
- Clean equipment including all lumens thoroughly per manufacturer's recommendations. (Protein material will stain a grayish color if not removed completely.)
- Rinse thoroughly with tap water.

Disinfection following cleaning:

- Submerge in Cidex OPA®, solution. Immerse device completely, filling all lumens and eliminating air pockets,
- Soak for **12 minutes at 20$^{o}$ C or higher** (room temperature only!) (All devices including endoscopes with lumens)
- Rinse all devices thoroughly by immersing devices completely in a large volume (e.g. 2 gallons) of sterile, tap or filtered water
- Discard the water following each rinse. Do not reuse the water for rinsing or any other purpose, as it will be contaminated with ortho-phthalaldehyde.
- **Repeat procedure twice.** (Each rinse should be a minimum of 1 minute in duration unless otherwise noted by the device or equipment manufacturer.

**NOTE: Endo-scopes with lumens**

- A minimum of 500 ml of water should be flushed through all lumens during **each separate rinse**, unless otherwise noted by the endoscope manufacturer.
- Discard the water following each rinse. Do not reuse the water for rinsing or any other purpose, as it will be contaminated with ortho-phthalaldehyde.
- If filtered or tap water is used for rinsing, use a final rinse of 70% isopropyl alcohol solution to speed drying and reduce the number of organisms present as a result of rinsing with potable water.

Drying:

- Air dry by hanging endoscopes. Other items should be placed on a clean towel in a clean area away from traffic.

Storage:

- Store in a clean, closed area.

**NOTE: EQUIPMENT IS CONSIDERED CLEAN, NOT STERILE**.

- Procedure to clean spills of blood and body fluids

**(If broken glass or other sharp materials may be present, use a dust pan, forceps or other device for clean-up; and discard the waste into a biohazard box lined with a red bag. )**

Don barrier gloves
Cover the spill with paper towels
Flood the spill area with the appropriately diluted bleach solution.
Allow the bleach solution to act for 10 minutes
Clean up the spill with additional paper towels.
Discard towels, gloves and other waste into a red bag.
An intermediate-level disinfectant should then be applied to the surface.

## SUPPORTIVE INFORMATION

### DEVELOPERS
- Hospital Epidemiology and Infection Control Committee

### SPONSOR
- Medical Care Evaluation Committee

## COMMUICATION & EDUCATION

**Initial**
- Directors of departments who use Cidex®, will be personally contacted by a representative of HEIC and informed of the change to Cidex OPA®.
- Training of all users of Cidex OPA® will be given by the Johnson & Johnson Co. representative prior to its introduction.
- This policy will be distributed to all Interdisciplinary Clinical Practice Manual (ICPM) holders and will be available on the Intranet in the ICPM. It will also be located on the HEIC Internet site (www.Hopkins-HEIC.org)

**Ongoing**
- The training video from Johnson and Johnson is available through the HEIC office to assist department managers in training new personnel.
- HEIC staff are available for consultation, education, etc. as requested by department managers.

### KEY WORDS
Cleaning, Disinfection, Cidex®, Cidex OPA®, AirX 109, scope cleaning, scope disinfection, endoscopes, instrument, blood spills

| REVIEW CYCLE | • Three (3) years | MEDICAL BOARD | Approval Date: 10/09/01<br>Effective Date: 10/09/01 |
|---|---|---|---|

VICE PRESIDENT FOR MEDICAL AFFAIRS

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Date: