ROYAL CENTRE FOR DISEASE CONTROL

SOP No. RCDC/QMS/QSE/SOP/2.10

STANDARD OPERATING PROCEDURE FOR LABORATORY DISINFECTION

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1. ACRONYMS

PPE- Personal Protective Equipment
RCDC- Royal center for disease control
IPA- Isopropyl Alcohol
LAF – Laminar Air Flow
WFI- Water for Injection

2. DEFINITION

Methods to used on the surfaces to destroy or eliminate a specific species of infectious microorganism through physical (e.g., heat) or chemical (e.g., disinfectant) methods.

Antiseptic: substance that prevents or arrests the growth or action of microorganisms by inhibiting their activity or by destroying them. The term is used especially for preparations applied topically to living tissue.

Cleaning: a process, usually involving removal, usually with detergent and water or enzyme cleaner and water, of foreign material (e.g. dirt or microorganisms). Cleaning is the most essential prerequisite to ensure effective disinfection.

Contaminated: state of having actual or potential contact with microorganisms. As used in health care, the term generally refers to the presence of microorganisms that could produce disease or infection.

Decontamination: use of physical or chemical means to remove, inactivate, or destroy blood-borne pathogens on a surface or item so that it is no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Decontamination area: area of a health-care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.

Disinfectant: usually a chemical agent (but sometimes a physical agent) that destroys disease-causing pathogens or other harmful microorganisms but might not kill bacterial spores. It refers to substances applied to inanimate objects.

Disinfection: Any process, chemical or physical, that destroys pathogens such that an item is safe to handle for its intended use.

3. PURPOSE

To ensure all the staff of Royal Centre for Disease Control is aware of correct procedure when decontaminating equipment or the environment of correct procedure and safety of laboratory personal to reduce risk of infections to the laboratory staff and as well as to reduce the risk of cross-contamination.

4. APPLICATION

This procedure ensures safety of laboratory personal working at RCDC, but can be used:

a. Food industry – sanitize food preparation areas for preservative functions.

b. Drinking water – typically chlorine, other organic oxidizers.

c. Medical – sterilization of equipment, facilities.

d. Household – cleaners (kitchen, bathroom, multipurpose), soaps, detergents.

e. Other industries – paints, inks, cosmetics (serves as preservative)

5. RESPONSIBILITIES

It is the responsibility of each lab personnel at RCDC to follow safe laboratory practices at all time (Microbiologist/Head – Microbiology section / Nominee).

6. PRINCIPLE

This SOP is to maintain uniformity of all safety practices followed at RCDC and to maintain clean environment in the RCDC. The effectiveness of disinfectants depends upon the population of organisms present, the concentration of both organism and disinfectant, the duration of contact, and the presence of organic debris. Common laboratory disinfectants with broad antimicrobial efficacy are working solutions of 70% ethanol and 1% sodium hypochlorite (bleach). It should not be assumed that these or any other common disinfectants are effective against all laboratory pathogens.

7. PROCEDURES

7.1 *Routine Disinfection (Cleaning procedures)*

Apply disinfectant to contaminated or potentially contaminated area. If visible or gross contamination is present, apply enough disinfectant to saturate the contamination. Let stand for the indicated contact time. Wipe thoroughly and place absorbent material in the bio-hazardous waste box, in case of biological spill.

7.2 Non-routine Disinfection:

For disinfection or decontamination outside of normal operations, such as cleaning a large piece of laboratory equipment prior to disposal, contact the Biological Safety Officer for assistance. It is necessary to produce an inventory of all biological materials that are or have been stored in the piece of equipment to be decontaminated. Disinfectant(s) will be selected based upon efficacy against the biological agents that are known or suspected to have contaminated the piece of equipment. The piece of equipment should be saturated with disinfectant to the extent that it's reasonably practicable and allowed to stand the contact time. If any processing, disassembly, or other modification of the equipment is necessary in order to facilitate decontamination, the Biological Safety Officer will perform a risk assessment and make recommendations on PPE and work practices as follow:

a. **Cover** spill area with paper towels.
b. **Disinfect** by pouring slowly around perimeter and into the center of spill area and let sit for 20 minutes.
c. **Clean** by absorbing with paper towels and place in a biohazard bag.
d. **Disinfect** by re-spraying the spill area with disinfectant; allow to air dry all work areas and materials that come or may come into contact with biological agents should be disinfected both before and after each use. This provides protection for personnel, the community and the environment.

e. Sweep the floor to remove the dust using non-shedding lint-free dry mop.
f. Take two buckets, add purified water in one bucket, and dilute disinfectant solution in another bucket as per respective SOP.
g. Wipe the cleaned surfaces first with mopping cloth wet with purified water and then with dilute disinfectant.
h. Clean the drains, sinks and wash basins with normal water daily once followed by flushing with disinfecting solution.
i. Clean and sanitize the media preparation table and washing area table with 70% ethanol.

j. Empty the waste bins daily and clean the bins with water and disinfectant solution.
k. Remove the dust from the ceiling, shelves, using vacuum cleaner monthly.
l. Wipe the floor with the floor cleaning solution.
m. Clean the area daily using a clean dry cloth.
n. Record the details of cleaning on housekeeping log Annexure No.-I.

7.3 List of Disinfectant to be used:

1. Sodium Hypochlorite solution 1%
2. Ethanol 70%
3. Bleaching power

7.4 Sequence of rotation:

On weekly rotation; one disinfectant for a week.

7.4.1 Frequency of cleaning –daily.

7.4.2 Sterility testing area:

7.4.3 Clean and disinfect the Garment cabinet and the used garment cabinet present in the Change room-1 with a lint free cloth wetted with 70 % Isopropyl alcohol (IPA).

7.4.4 Clean the floor, glass surfaces, LAF hood with WFI and wipe with sterile lint free mop pads.

7.4.5 Sprinkle the disinfectant on the floor and spread with sterile lint free mop pads.

7.4.6 Allow for the contact period of 10 minutes.

7.4.7 Wipe out the excess disinfectant with the sterile lint free mop pads using a long handled mop.

7.4.8 Follow the above steps in a sequence from testing room to change rooms.

7.4.9 Sanitize the dedicated slippers with the same disinfectant as used for the floor daily by dipping them in disinfectant and allowing the contact period of 10 minutes. After completions of the contact period dip in WFI, spray 70% IPA and allow drying.

7.4.10 Clean the autoclave door and cabinet daily with 70% IPA solution.

7.4.11 Clean all the surfaces, trolleys and furniture daily with the disinfectant.

7.4.12 Change the disinfectants every week and use in rotation as below.

7.4.13 Clean and disinfect the used garment box and the cross over bench daily with 70 % P.A.

7.4.14 Clean the floor, glass surfaces, LAF hood with WFI and wipe with sterile lint free mop pads.

7.4.15 Sprinkle the disinfectant on the floor and spread with sterile lint free mop pads.

7.4.16 Allow for the contact period of 10 minutes.

7.4.17 Wipe out the excess disinfectant with the sterile lint free mop pads using a long handled mop.

7.4.18 Sanitize the dedicated slippers with the same disinfectant as used for the floor daily by dipping them in disinfectant and allowing the contact period of 10 min. After completion of the contact period dip in WFI, spray 70% IPA and allow drying.

8 How to prepare 70% ethanol

Take 700ml of absolute ethanol and add 300ml of distilled water to produce 1 litre of 70% ethanol.

9 ASSOCIATED DOCUMENTS

9.1 Disinfection Log

9.2 Housekeeping check list form

9.3 Incident reporting forms

10 PRECAUTIONS

To follow all necessary precautions for laboratory safe practices to protect yourself and co-workers

11. QUALITY CONTROL

NA

12. LIMITATIONS

None

13. ANNEXURE

Forms

14. REFERENCE

i. Pharmapathway.com

Annexure-I

Record for Cleaning and Disinfection log

Date: _____

Area	Cleaned with	Disinfected by	Disinfectant Ref. No.	Done by / Time	Checked by	Remarks / Date

General Corridor						
TB microbiology room						
Media Preparation Area						
Washing room						
Office						